

Environmental Protection Agency

# EJSCREEN User Guide

2017

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### A. EPA EJSCREEN Web Application

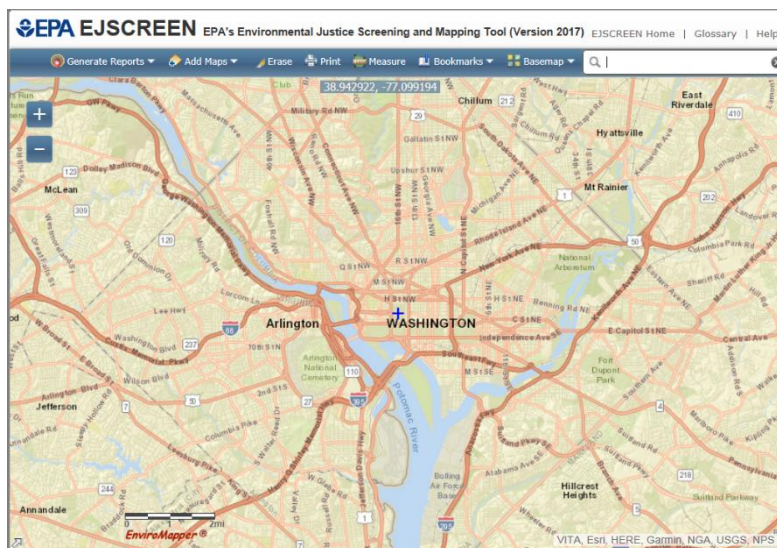
This document provides an introduction to EJSCREEN and walks through how to start using the tool. The EJSCREEN website and *EJSCREEN Technical Documentation* provide many more details on the data and methods behind the tool.

EJSCREEN is an environmental justice mapping and screening tool that provides EPA with a nationally consistent dataset and approach that combines environmental and demographic indicators in maps and reports. This can help to highlight geographic areas and the extent to which they may be candidates for further review, including additional consideration, analysis or outreach. The tools also allow users to explore locations at a detailed geographic level, across broad areas or across the entire nation.

The screening tool includes 12 environmental factors\*, 7 demographic factors, and a variety of EJ indexes. Each EJ index combines multiple demographic factors with a single environmental factor (such as proximity to traffic). The screening tool has Census block group resolution, and provides a number of capabilities, including color coded mapping, the ability to generate a standard report for a selected area, and comparisons showing how a selected area compares to the relevant state, EPA region, or the nation as a whole.

Users should keep in mind that screening tools have substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas, such as Census block groups. Also, in many cases, data on the full range of environmental impacts and demographic factors in any given location will not be available directly through this tool, and its initial results should be supplemented with additional information and local knowledge.

To access the application, navigate to <https://www.epa.gov/ejscreen>

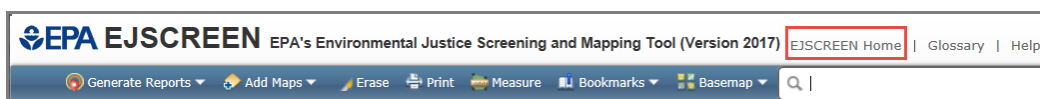


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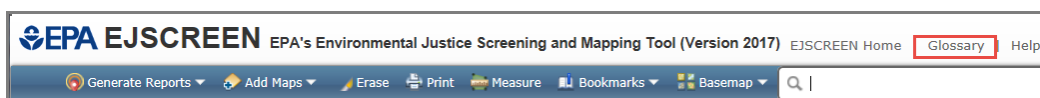
### B. EJSCREEN Web Application Home Screen

The EJSCREEN Application contains a number of user interface controls as well as data display and advanced analysis tools.

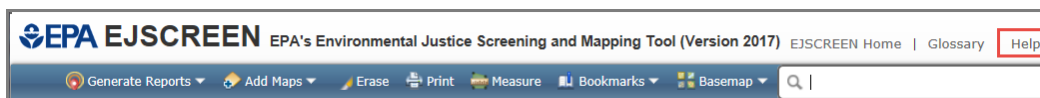
To learn more about EJSCREEN, click the **EJSCREEN Home** link in the top right corner of the application.



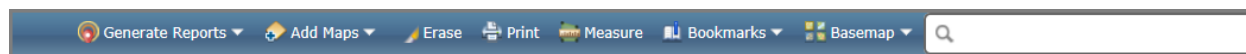
To access the EJSCREEN Glossary, click the **Glossary** link in the top right corner of the application.



To access help documentation for the EJSCREEN Application, click the **Help** link in the top right corner of the application.



Along the top bar of the application, a variety of widgets are available for use:



- **Generate Reports:** Pick location and see report on a user-defined place or block group
- **Add Maps:** See EJSCREEN and other supplementary map data
- **Erase:** Remove any drawings from the map
- **Print:** Print map
- **Measure:** Measure distance, find the area of a polygon, get lat/long
- **Bookmarks:** Save locations for review
- **Basemap:** Change map background to show roads, satellite view, etc.
- **Find address or place:** Locate a specific address or area

For a more detailed explanation on each widget, see sections C and D.

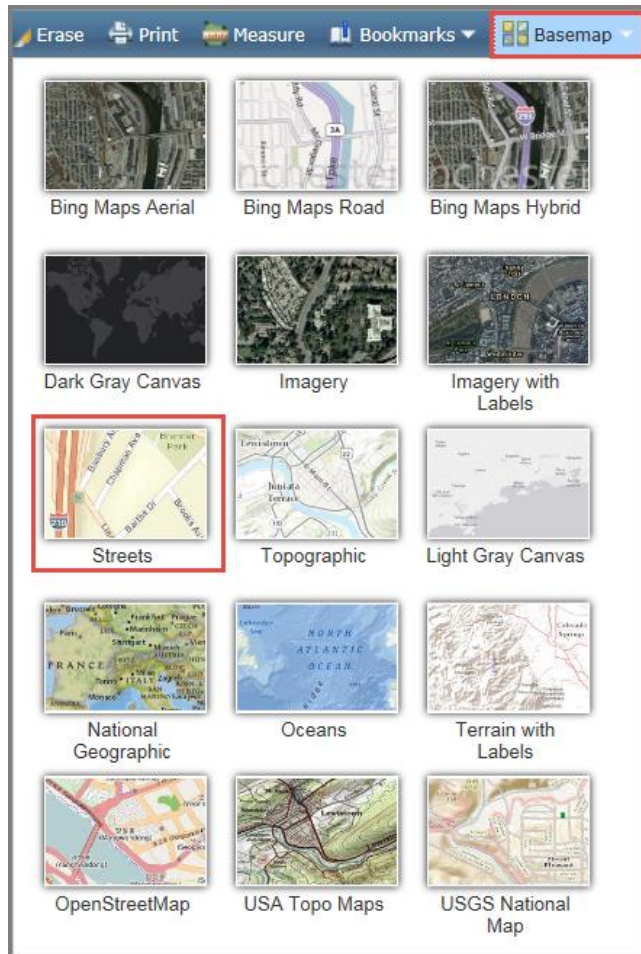
### C. Exploring and Navigating Maps

Several data display, basemap and navigation tools are available.

### 1. Basemaps

Click the down arrow in the Basemap widget to change the basemap for the map display.

Click any of the basemap options to change the display of the basemap. Streets is the default display.



### 2. Navigation

The Navigation widget is visible in the upper left hand corner of the application. This widget allows manual navigation of the map display with a click interface.

#### 2.1 Zoom In/Out

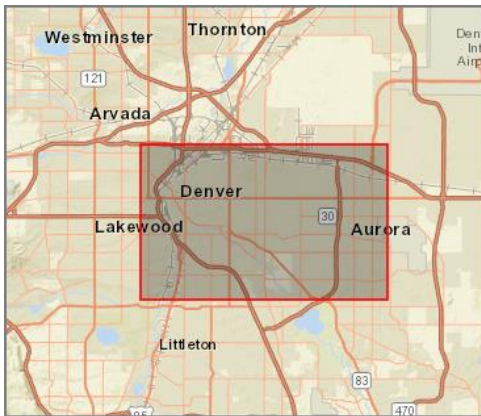
The map display can be zoomed by using the mouse wheel to zoom in/out, using the Zoom In/Out tool or by bounding box

To use the **Zoom In/Out** tool to zoom in and out of the map display:



1. Click the plus sign to zoom in to the map display.
2. Click the minus sign to zoom out of the map display.

To use a bounding box to zoom in on the map display:



1. Hold the shift key with one hand.
2. Hold the left mouse button and drag a rectangle to the area of interest.
3. Release the mouse button to zoom to selected area.

### 2.2 Pan

The Pan tool is used to scroll the map in the direction and by the amount you choose.

1. Click and hold on any location in the map display.
2. Drag the mouse, and the map will move in the corresponding direction.

## 3. Overview Map and Scale Bar

The Overview Map tool displays a small overview map in the lower left-hand corner of the map display that shows a zoomed-out view of the map data along with a gray rectangle that defines the map display's current view extent.

1. Click the arrow button to expand the overview map.

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2. Click the arrow again to minimize the overview map back to its original position.



The Scale Bar in the lower left corner of the map display adjusts length according to the zoom level. It is drawn in miles.



Note: The scale bar can be hidden when widgets are open in the EJSCREEN application. You may need to close widgets to view the scale bar.

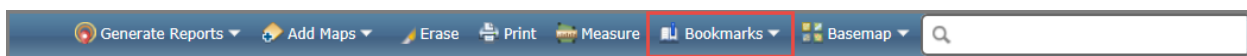
## D. Using EJSCREEN Widgets for Analysis

### 1. Bookmarks Widget

#### 1.1 Bookmarks List

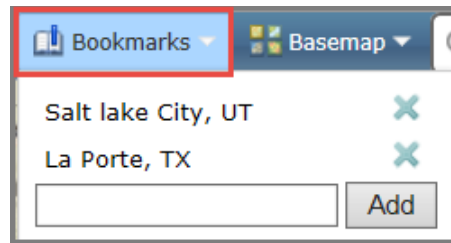
The **Bookmarks** widget stores a collection of map view extents or spatial bookmarks. Users can add their own bookmarks and then use these to return to a previous view or switch between views.

1. Locate the Widget toolbar at the top of the application.
2. Click the Bookmarks icon.



The Bookmarks window will be displayed.

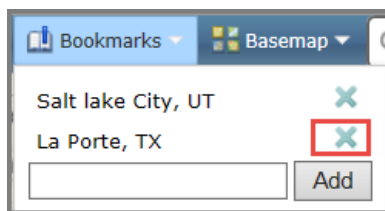




### 1.2 Adding and Deleting Bookmarks

Use the **Bookmarks** widget to add a new bookmark based on the current map extent. A name can be provided for this bookmark at the prompt.

1. Zoom to a location of interest.
2. Click **Bookmarks widget** in the toolbar.
3. An Enter Session Name text box will display.
4. Enter the name of the location of interest in the text box.
5. Click outside of the Bookmarks widget when complete to save the bookmark or click the **blue X** to remove the bookmark.
6. To remove a bookmark, click the **Bookmarks** button.
7. Next to the bookmark created, click the **blue X**.



The bookmark will be removed.

### 2. Find an Address or Place Widget

The **Find an Address** widget allows the user to find a location of interest via an address or by coordinates.

#### 2.1 Find an Address

In the **Find an address or place** text box, enter an address or location to search for that location. This can be a street address, a town, a ZIP Code, or other location.



The application will list possible matches for the input. Click the **search icon**, use the enter key on the keyboard, or click an entry from the list.

If no matches are found for the input location, the map will remain unchanged.

1. Enter a location (for example: street address, town, ZIP Code, or other location) in the **Enter the address** text box.



2. Click **the search icon**.

The map display will zoom to that location if found.

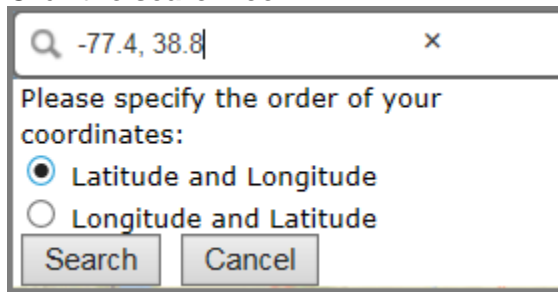
#### 2.2 Coordinates

Searching by **Coordinates** allows the user to input longitude and latitude coordinates and zoom to that point.

1. Enter values for **Longitude (X)** and **Latitude (Y)** in the **Find an address or place** text box



2. Click **the search icon**.

A search dialog box with a search bar at the top containing the text "-77.4, 38.8" and a close button (X). Below the search bar, the text "Please specify the order of your coordinates:" is displayed. There are two radio button options: "Latitude and Longitude" (which is selected) and "Longitude and Latitude". At the bottom of the dialog are two buttons: "Search" and "Cancel".

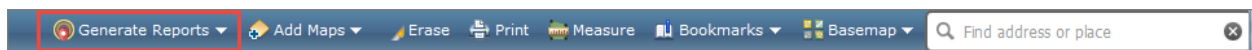
The option to choose the order of your coordinates will display, with Latitude and Longitude as the default.

3. Click the Search button

The map display will zoom to that location if found.

### 3. Generate Reports Widget

The **Generate Reports** widget is used to identify a location of interest or known geography and then provide EJ Indexes and Environmental and Demographic reports for that area. In addition to a bar chart (where scores for the location can be compared to state, regional and national scores), users can generate a tabular view for downloading or a graphic standard report in PDF format.



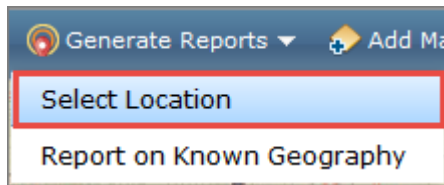
2011 - 2015 American Community Survey (ACS), 2010 Census, and Center for Disease Control (CDC) reports are also available.

**Note:** Currently, EJSCREEN indexes for the US Territories have not been developed. In addition, PM 2.5 and Ozone data currently are not available in EJSCREEN for Alaska, Hawaii, and Puerto Rico.

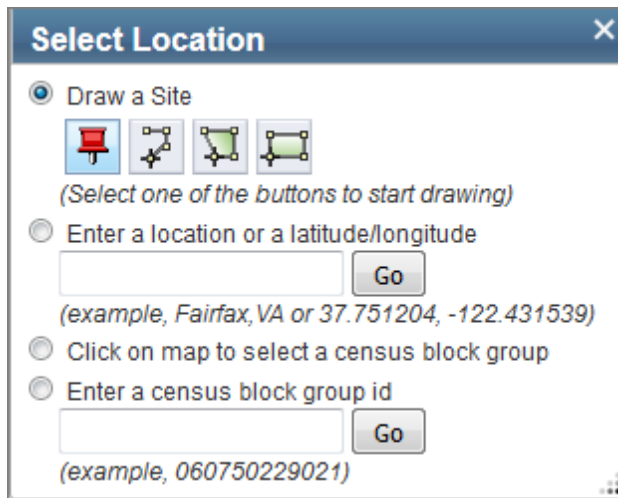
#### 3.1 Select Location

The **Select Location** option is intended for examining EJ Indexes, Environmental variables, and Demographic variables across block group-level data for the United States.

1. Locate the Widget toolbar at the top of the application.
2. Click the **Generate Reports** icon and then the **Select Location** link.



The **Select Location** window will be displayed.



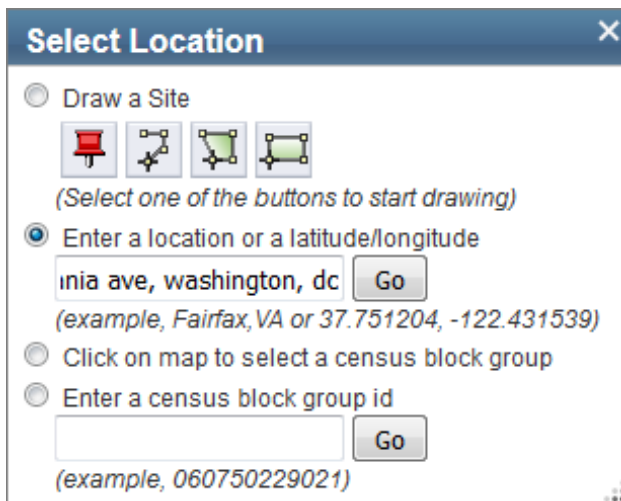
### 3.1.1 Locate an Address

The **Select Location** widget provides options to draw a site, enter a location, or latitude/longitude coordinate pair, click on the map to select a census block group, or enter a census block group id.

If a point, address, geographic coordinates or a location is selected the map will focus on a point and provide a 1 mile buffer as the default.





Whenever a block group is selected, by either clicking on it in the map display or entering it in the widget, the map zooms to that block group to allow the user to examine neighboring groups for variation.

1. Type in a location in the **Enter a location or a latitude/longitude** text box in the **Select Location** widget.



**Select Location** [X]

☐ Draw a Site

(Select one of the buttons to start drawing)

☒ Enter a location or a latitude/longitude

(example, Fairfax, VA or 37.751204, -122.431539)

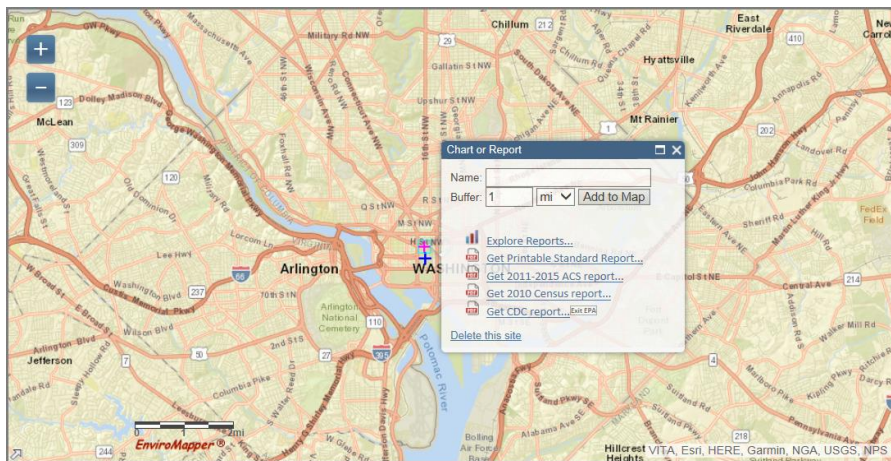
☐ Click on map to select a census block group

☐ Enter a census block group id

(example, 060750229021)

2. Click **Go**.

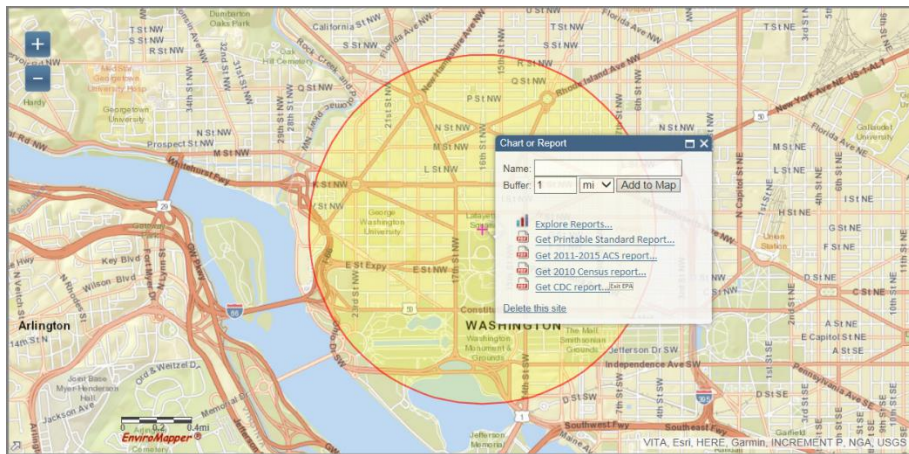
The map display zooms to the location.



### 3.1.2 Buffer

When user input is a geographic point a buffer is applied around the point. The ring will aggregate appropriate portions of the intersecting block groups, weighted by population, to create a representative set of data for the entire ring area, honoring variation and dispersion of the population in the block groups within it. For each indicator, the result is a population-weighted average, which equals the block group indicator values averaged over all residents who are estimated to be inside the buffer.<sup>1</sup>

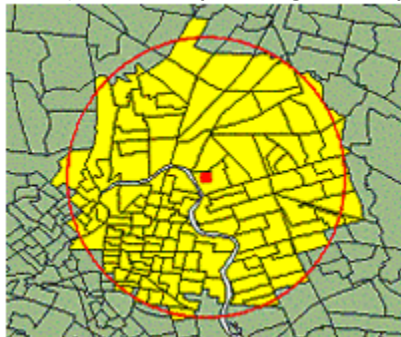
The map display will locate the point location and provide the option to add the buffer to the map (for example, 1-mile buffer around 1600 Pennsylvania Ave NW, Washington, DC 20004).



<sup>1</sup> For buffered areas, values are calculated following these steps:

1. The selected point is buffered using the native Geometry Service published through ArcGIS Server.
2. To spatially aggregate the EJSCREEN data for the buffered ring area for the analysis, the tool takes into account the block points that exist within the block groups to account for the block groups that are partially intersected with the ring area. A weight factor for each block group is determined by summing each block point population percentage for that block group. If the ring touches part of a neighboring block group that contains no block points, nothing will be aggregated; if a ring intersects a number of block groups, EJSCREEN indices will be aggregated within each block group based on the affiliated block points.
3. The aggregation is done by using factor-weighted block points.

These calculated EJSCREEN indices are returned to the web application for display in the viewer (as population and raw values) and for comparison against the percentile tables



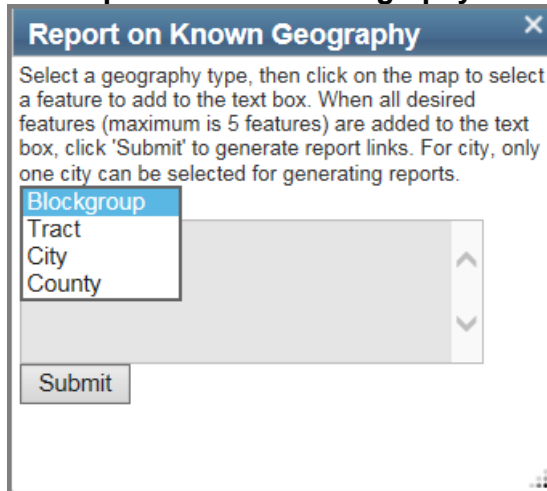
### 3.2 Report on Known Geography

The **Report on Known Geography** option allows reporting for a single City, or a single or multiple Counties, Tracts, or Blockgroups.

1. Locate the Widget toolbar at the top of the application.
2. Click the **Generate Reports** icon and then the **Report on Known Geography** link.



The **Report on Known Geography** window will be displayed.



3. Select Blockgroup, Tract, City, or County from the Geography Type dropdown menu.
4. Then click on the map to add features. Up to five features can be selected for Blockgroup, Tract or County. Only one City can be selected for generating reports.
5. Then click 'Submit' to generate reports.

### 3.3 Explore Reports

The **Select Location** widget Explore Reports option is driven by 31 data variables, displayed below:



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Environmental Indicators	Demographic Indicators	EJ Indexes
<a href="#">[Unselect All]</a>		
<input checked="" type="checkbox"/> PM 2.5	<input checked="" type="checkbox"/> Ozone	<input checked="" type="checkbox"/> NATA Diesel PM
<input checked="" type="checkbox"/> NATA Cancer Risk	<input checked="" type="checkbox"/> NATA Respiratory HI	<input checked="" type="checkbox"/> Traffic Proximity
<input checked="" type="checkbox"/> Lead Paint Indicator	<input checked="" type="checkbox"/> Superfund Proximity	<input checked="" type="checkbox"/> RMP Proximity
<input checked="" type="checkbox"/> Hazardous Waste Proximity	<input checked="" type="checkbox"/> Wastewater Discharge Indicator	

Environmental Indicators	Demographic Indicators	EJ Indexes
<a href="#">[Unselect All]</a>		
<input checked="" type="checkbox"/> Demographic Index	<input checked="" type="checkbox"/> Minority Population	<input checked="" type="checkbox"/> Low Income Population
<input checked="" type="checkbox"/> Linguistically Isolated	<input checked="" type="checkbox"/> Less Than HS Education	<input checked="" type="checkbox"/> Under Age 5
<input checked="" type="checkbox"/> Over Age 64		

Environmental Indicators	Demographic Indicators	EJ Indexes
<a href="#">[Unselect All]</a>		
<input checked="" type="checkbox"/> PM 2.5	<input checked="" type="checkbox"/> Ozone	<input checked="" type="checkbox"/> NATA Diesel PM
<input checked="" type="checkbox"/> NATA Cancer Risk	<input checked="" type="checkbox"/> NATA Respiratory HI	<input checked="" type="checkbox"/> Traffic Proximity
<input checked="" type="checkbox"/> Lead Paint Indicator	<input checked="" type="checkbox"/> Superfund Proximity	<input checked="" type="checkbox"/> RMP Proximity
<input checked="" type="checkbox"/> Hazardous Waste Proximity	<input checked="" type="checkbox"/> Wastewater Discharge Indicator	

These data variables represent the data that is can be displayed in the bar chart on the bottom half of the widget. As the default, all data layers in the chosen group are selected. Once a data layer is visible, it is displayed in the **Chart of Data Comparisons** as well as in the **Tabular Data** table (if currently visible).

For detailed descriptions of the Environmental Indicators, Demographic Indicators, and Environmental Justice Indexes, see the glossary at <https://www.epa.gov/ejscreen/glossary-ejscreen-terms>.

### 3.4 Chart of Data Comparisons

Above the main chart in the **Select Location** widget Explore Reports option, there is a listing of which block group is currently selected for data display along with its State, EPA Region and total population:

Block group 110010062021, DISTRICT OF COLUMBIA, EPA Region 3 (Population: 0)
--

This graphic is slightly different for a buffer ring-based analysis, which displays the x,y coordinates of the center of the circle along with radius and aggregate population (estimated):



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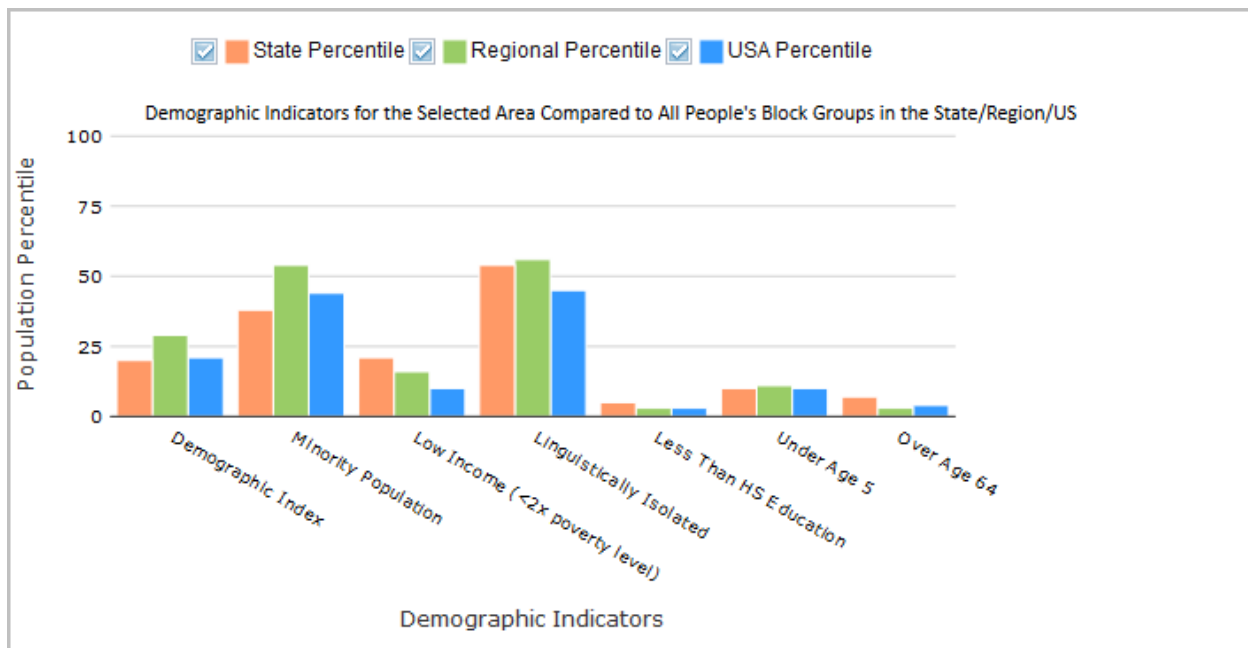
1 mile Ring Centered at 38.898723,-77.036531, DISTRICT OF COLUMBIA, EPA Region 3 (Population: 46706)

Below the identifying text, there is a series of selection check boxes that allow the user to control which comparative geographies are visible on the chart. The chart is built to handle one geography (State, Region, or USA) or all three at the same time, so the user may feel free to select whichever comparison is most relevant.

☐ State Percentile ☐ Regional Percentile ☐ USA Percentile

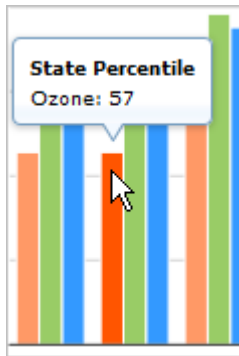
The chart itself displays a series of bar graphs, comparing the currently selected area (either block group or buffered ring) to the state, regional and national statistics for each variable.

The y-axis of the chart runs from 0 to 100 showing percentiles. The x-axis displays different data variables, as selected by the user.

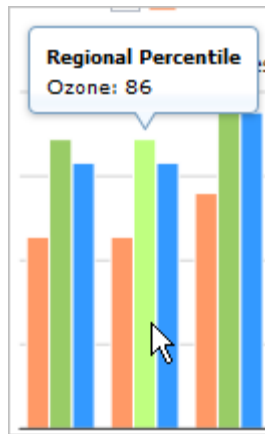


Pointing to a bar will show a pop-up window including the bar's geography, the variable displayed, and the percentile that the selected block group or ring represents when compared to a larger group. For example, if your area is at the 57<sup>th</sup> Percentile in the state, this means the average person there has a block group score greater than (or equal to) that of 57% of the state population.

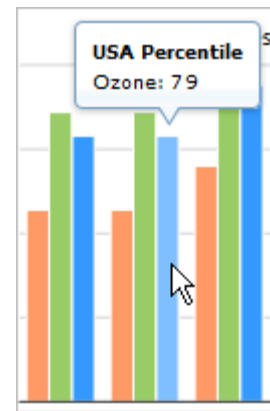
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57<sup>th</sup> Percentile in State



86<sup>th</sup> Percentile in Region

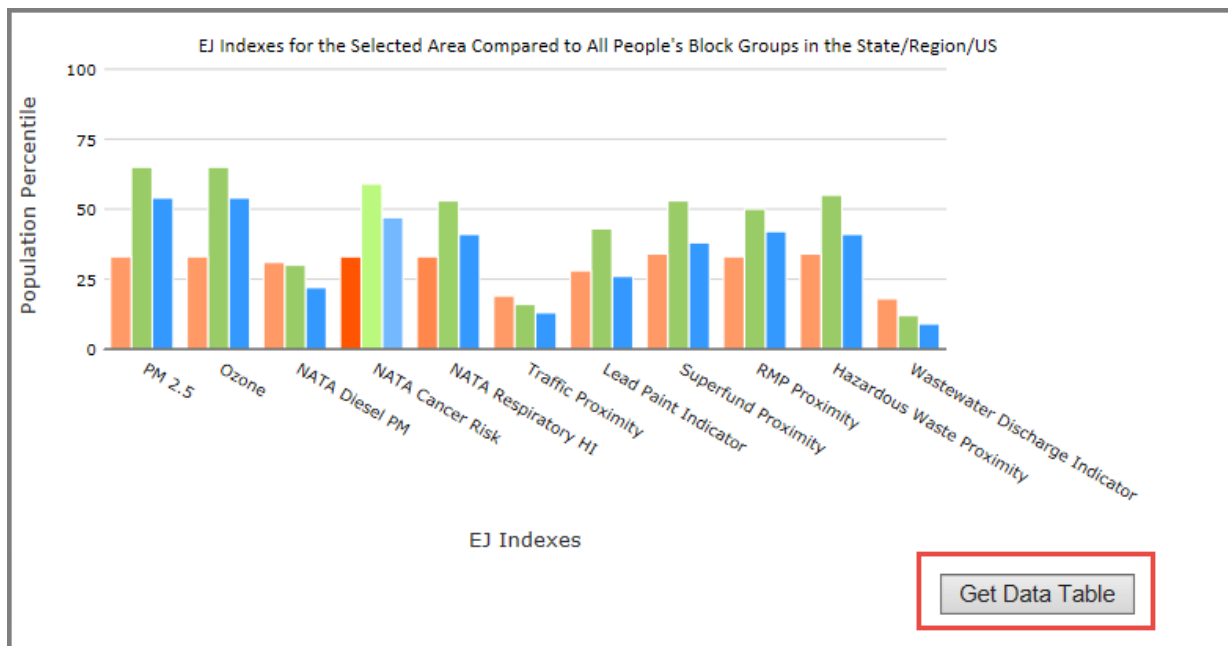


79<sup>th</sup> Percentile Nationally

### 3.5 Tabular View

Below the chart data, the **Get Data Table** button takes the displayed data and creates a table in a pop-up window within the application. Whichever variables are selected ("checked") in the data tables are displayed in this table.


EJ indexes do not display raw data, but the rest of the data types include a raw score, state average and percentile, regional average and percentile, and national average and percentile.



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Block group 510131020032, VIRGINIA, EPA Region 3 (Population: 1,459)									
#	Category	Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
1	EJ Index	EJ Index for Particulate Matter (PM 2.5)			77		77		68
2	EJ Index	EJ Index for Ozone			75		77		67
3	EJ Index	EJ Index for NATA Diesel PM			88		84		79
4	EJ Index	EJ Index for NATA Air Toxics Cancer Risk			80		80		71
5	EJ Index	EJ Index for NATA Respiratory Hazard Index			82		81		74
6	EJ Index	EJ Index for Traffic Proximity and Volume			92		92		88
7	EJ Index	EJ Index for Lead Paint Indicator			89		85		81
8	EJ Index	EJ Index for Superfund Proximity			80		78		74
9	EJ Index	EJ Index for RMP Proximity			74		74		64
10	EJ Index	EJ Index for Hazardous Waste Proximity			84		80		75
11	EJ Index	EJ Index for Wastewater Discharge Indicator			83		80		77
12	Environmental	Particulate Matter (PM 2.5 in ug/m3)	9.34	8.36	95	9.26	48	9.14	50
13	Environmental	Ozone (ppb)	36.9	37.7	19	37.9	16	38.4	35
14	Environmental	NATA Diesel PM (ug/m3)	2.59	0.769	99	0.92	95-100th	0.938	95-100th

The user can adjust column widths, scroll through the table, and sort the table by clicking on the column heading. The tabular view also includes the block group Federal Information Processing Standards (FIPS) code, the state, EPA region and population. This table is functional for both the block group selection method and the buffer ring selection method.

In the top right-hand corner of the **Tabular View** window, there is an icon  which will allow the user to download data as text file. This functionality will save the tabular data to a comma separated value file at a location of the user's choice. The data can be imported to a spreadsheet program or opened as a text file for archiving or future analysis.

Block group 510131020032, VIRGINIA, EPA Region 3 (Population: 1,459)									
#	Category	Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
1	EJ Index	EJ Index for Particulate Matter (PM 2.5)			77		77		68
2	EJ Index	EJ Index for Ozone			75		77		67
3	EJ Index	EJ Index for NATA Diesel PM			88		84		79
4	EJ Index	EJ Index for NATA Air Toxics Cancer Risk			80		80		71
5	EJ Index	EJ Index for NATA Respiratory Hazard Index			82		81		74
6	EJ Index	EJ Index for Traffic Proximity and Volume			92		92		88
7	EJ Index	EJ Index for Lead Paint Indicator			89		85		81
8	EJ Index	EJ Index for Superfund Proximity			80		78		74
9	EJ Index	EJ Index for RMP Proximity			74		74		64
10	EJ Index	EJ Index for Hazardous Waste Proximity			84		80		75
11	EJ Index	EJ Index for Wastewater Discharge Indicator			83		80		77
12	Environmental	Particulate Matter (PM 2.5 in ug/m3)	9.34	8.36	95	9.26	48	9.14	50
13	Environmental	Ozone (ppb)	36.9	37.7	19	37.9	16	38.4	35
14	Environmental	NATA Diesel PM (ug/m3)	2.59	0.769	99	0.92	95-100th	0.938	95-100th

### 3.6 Get Printable Standard Report

A user who would like a more concrete representation of the data available in EJSCREEN can choose to export a PDF using the **Get Printable Standard Report** link on the **Chart or Report** widget.



**NOTE:** It is important to wait for the report to finish creating, which may take 10 seconds or more. Do not click the **Get Printable Standard Report** link again until a report has been returned.

Once the report is created, the user will then have the option of saving the report as PDF.

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## EJSCREEN Report (Version 2017)

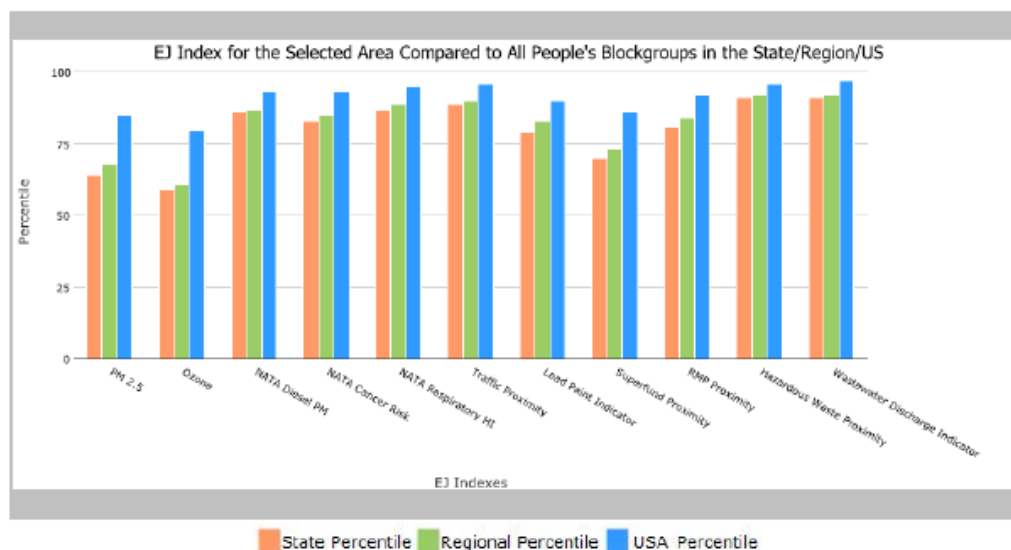


Blockgroup: 060372077101, CALIFORNIA, EPA Region 9

Approximate Population: 3,197

Input Area (sq. miles): 0.43

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
<b>EJ Indexes</b>			
EJ Index for PM2.5	64	68	85
EJ Index for Ozone	59	61	80
EJ Index for NATA* Diesel PM	86	87	93
EJ Index for NATA* Air Toxics Cancer Risk	83	85	93
EJ Index for NATA* Respiratory Hazard Index	87	89	95
EJ Index for Traffic Proximity and Volume	89	90	96
EJ Index for Lead Paint Indicator	79	83	90
EJ Index for Superfund Proximity	70	73	86
EJ Index for RMP Proximity	81	84	92
EJ Index for Hazardous Waste Proximity	91	92	96
EJ Index for Wastewater Discharge Indicator	91	92	97



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

June 22, 2017

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# EJSCREEN User Guide



## EJSCREEN Report (Version 2017)



Blockgroup: 060372077101, CALIFORNIA, EPA Region 9

Approximate Population: 3,197

Input Area (sq. miles): 0.43



June 22, 2017  
Digitized Polygon

1:36,112  
0 0.5 1 2 mi  
0 0.5 1 2 km  
BUT NOT HERE. ONLY USE ORIGIN. INCREMENT 10000. NOT  
JUNE 2017. NOT FOR PUBLICATION. NOT FOR SALE. NOT FOR  
USE. © 2017. All rights reserved. This is a U.S. Government  
work. It is in the public domain in the United States of America.

Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

June 22, 2017

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# EJSCREEN User Guide



## EJSCREEN Report (Version 2017)

Blockgroup: 060372077101, CALIFORNIA, EPA Region 9

Approximate Population: 3,197

Input Area (sq. miles): 0.43



Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
<b>Environmental Indicators</b>							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$ )	12.5	10.6	90	9.9	92	9.14	98
Ozone (ppb)	38.3	40.8	35	41.8	28	38.4	54
NATA* Diesel PM ( $\mu\text{g}/\text{m}^3$ )	2.92	0.973	98	0.978	95-100th	0.938	95-100th
NATA* Cancer Risk (lifetime risk per million)	100	44	99	43	95-100th	40	95-100th
NATA* Respiratory Hazard Index	6.1	2.1	99	2	95-100th	1.8	95-100th
Traffic Proximity and Volume (daily traffic count/distance to road)	3500	1200	90	1100	91	500	96
Lead Paint Indicator (% Pre-1960 Housing)	0.59	0.29	80	0.24	84	0.29	81
Superfund Proximity (site count/km distance)	0.14	0.17	70	0.15	75	0.13	76
RMP Proximity (facility count/km distance)	2.3	1.1	87	0.98	89	0.73	93
Hazardous Waste Proximity (facility count/km distance)	0.48	0.13	95	0.12	96	0.093	97
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.6	16	88	13	88	30	94
<b>Demographic Indicators</b>	47%	49%	49	47%	52	36%	71
Demographic Index	53%	61%	39	59%	43	38%	70
Minority Population	41%	36%	61	36%	61	34%	65
Low Income Population	14%	10%	72	9%	75	5%	88
Linguistically Isolated Population	11%	18%	43	17%	46	13%	54
Population With Less Than High School Education	5%	7%	39	7%	39	6%	43
Population Under 5 years of age	13%	12%	62	13%	61	14%	51
Population over 64 years of age							

\* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: <https://www.epa.gov/national-air-toxics-assessment>.

For additional information, see: [www.epa.gov/environmentaljustice](http://www.epa.gov/environmentaljustice)

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

June 22, 2017



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## EJSCREEN User Guide

The **Printable Standard Report** report will include the following:

- The current date
  - The block group that the data represents (Block group selection)
  - The latitude and longitude of the center of the buffered ring (Buffer ring selection)
  - The state and EPA region that the data is encompassed by
  - Input area (in square miles)
  - A table of the number of sites reporting to EPA
  - A table of all the variables available in the widget and for each variable the following:
    - Raw value (except EJ Indexes)
    - State average (except EJ Indexes)
    - State percentile
    - Regional average (except EJ Indexes)
    - Regional percentile
    - National average (except EJ Indexes)
    - National percentile
  - A link to metadata about the report and the tool
- Zero is a known and valid value for a data element. NA (not available or “null”) means that no value was calculated for that data element. For example, Ozone and PM 2.5 concentrations were not available for Alaska, so all associated data elements are set to “null”.

 <b>EJSCREEN Report (Version 2017)</b>  Blockgroup: 060372077101 CALIFORNIA, EPA Region 9 Approximate Population: 3,197 Input Area (sq. miles): 0.43			
Selected Variables	Percentile in State	Percentile in EPA Region	Percentile in USA
<b>EJ Indexes</b>			
EJ Index for Particulate Matter (PM 2.5)	64	68	85
EJ Index for Ozone	59	61	80
EJ Index for NATA* Diesel PM	86	87	93
EJ Index for NATA* Air Toxics Cancer Risk	83	85	93
EJ Index for NATA* Respiratory Hazard Index	87	89	95
EJ Index for Traffic Proximity and Volume	89	90	96
EJ Index for Lead Paint Indicator	79	83	90
EJ Index for Superfund Proximity	70	73	86
EJ Index for RMP Proximity	81	84	92
EJ Index for Hazardous Waste Proximity	91	92	96
EJ Index for Wastewater Discharge Indicator	91	92	97

Multiple reports can be created per session.

### 3.7 Get 2011-2015 ACS Report or 2010 Census Report

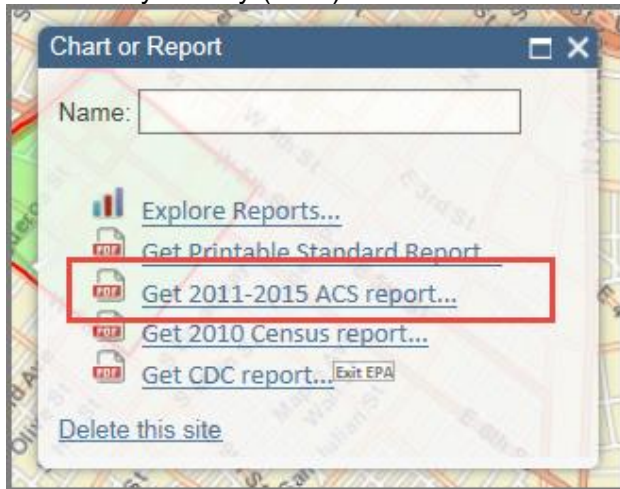
Two demographic report options are available under the **Select Location** widget **Chart or Report** option.



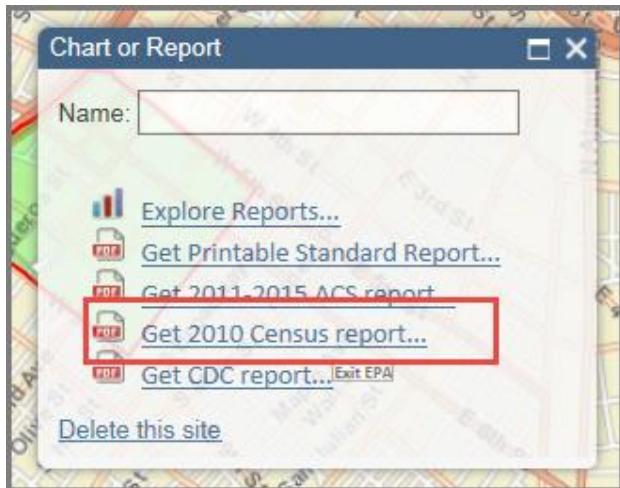
## EJSCREEN User Guide

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The **Get 2011-2015 ACS Report** link provides a report with US Census Bureau American Community Survey (ACS) data in PDF format.



The **Get 2010 Census report** link provides a report with data from the US Census Bureau, Census 2010 Summary File 1 in PDF format.



### 3.8 Get CDC Report

The **Get CDC report** link links to a Center for Disease Control and Prevention (CDC) report with environmental health issues for the county.

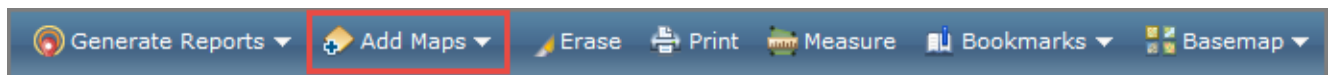


### 4. Add Maps Widget

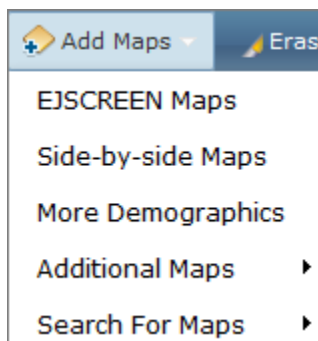
The **Add Maps** widget is intended to allow users to add EJSCREEN and other supplementary map data along with web maps from ArcGIS Online or EPA GeoPlatform Online.

Web map layers are displayed on top of the existing map data and can be toggled on and off and controlled just like any other layer.

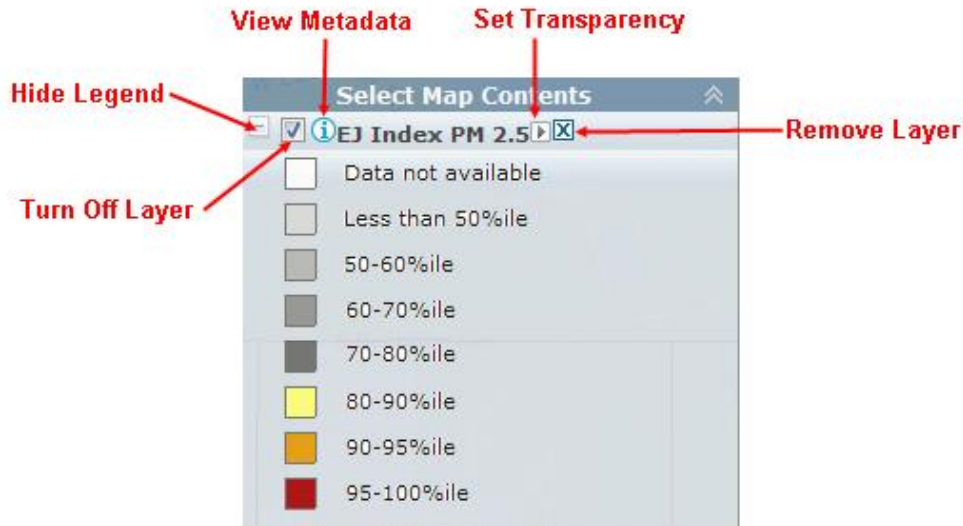
1. Locate the Widget toolbar at the top of the application.
2. Click the **Add Maps** icon.



The **Add Maps** options will be displayed.

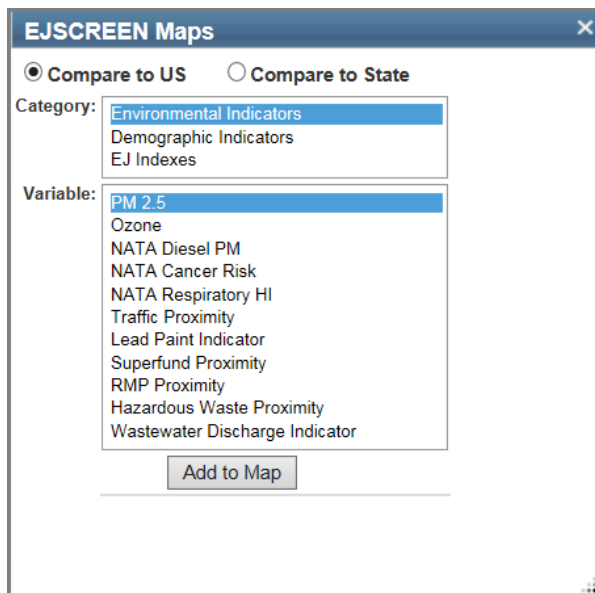


- When map layers are added to the map, the layer legend will be added under the **Select Map Contents** menu on the right hand side of the map. Layer options are available in the **Select Map Contents** window.



### 4.1 EJSCREEN Maps

The **EJSCREEN Maps** option allows users to display the EJ Indexes, as well as the environmental indicators, and demographic indicators which comprise the EJ Indexes as color-coded (thematic) maps.



## EJSCREEN User Guide

The data available for each of the layer groups are shown below:

**EJSCREEN Maps** [X]

☒ Compare to US    ☐ Compare to State

Category: Environmental Indicators  
Demographic Indicators  
EJ Indexes

Variable: PM 2.5  
Ozone  
NATA Diesel PM  
NATA Cancer Risk  
NATA Respiratory HI  
Traffic Proximity  
Lead Paint Indicator  
Superfund Proximity  
RMP Proximity  
Hazardous Waste Proximity  
Wastewater Discharge Indicator

Add to Map

**EJSCREEN Maps** [X]

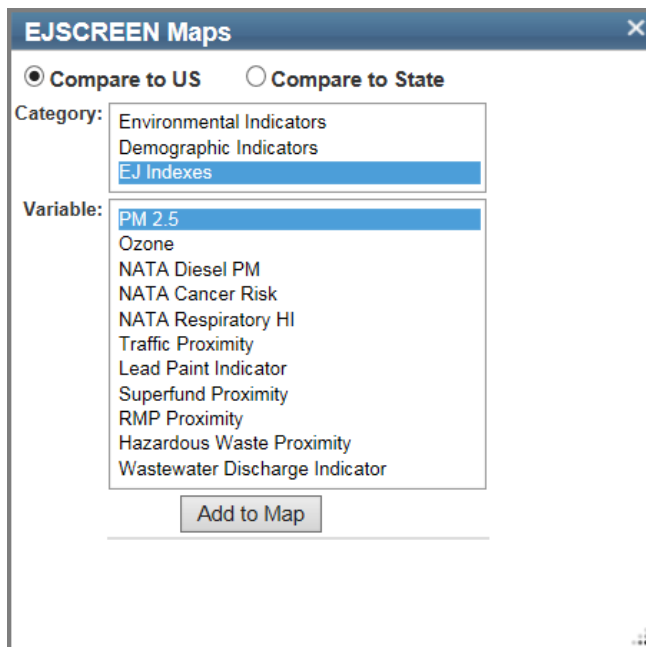
☒ Compare to US    ☐ Compare to State

Category: Environmental Indicators  
Demographic Indicators  
EJ Indexes

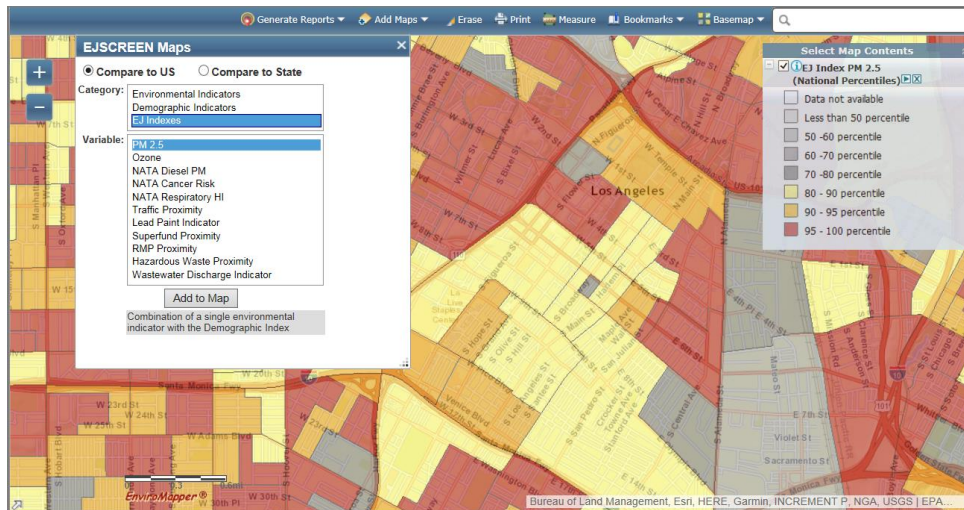
Variable: Demographic Index  
Minority Population  
Low Income Population  
Linguistically Isolated  
Less Than HS Education  
Under Age 5  
Over Age 64

Add to Map

## EJSCREEN User Guide



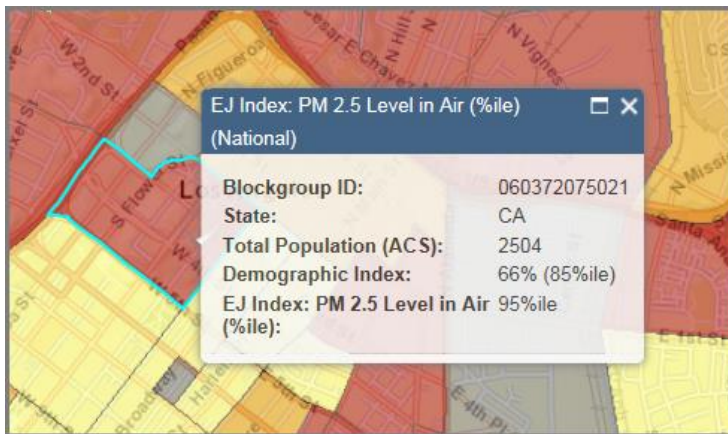
1. When the **EJSCREEN Maps** tool is opened, Compare to US and Environmental Indicators are selected as the default. To change the selections, click the Compare to State radio button if desired, select a Category, then select a Variable from the menu and then click the Add to Map button.
2. This will add a map layer that will display the selected variable based on national or state percentile groups as indicated in the **legend** added under map contents to the right hand side of the map.



3. Clicking on a block group when any of the **Map EJ Indexes** layers are activated will show a pop-up window that includes the location's blockgroup ID, state, population count, indicator values, and national or state percentile.

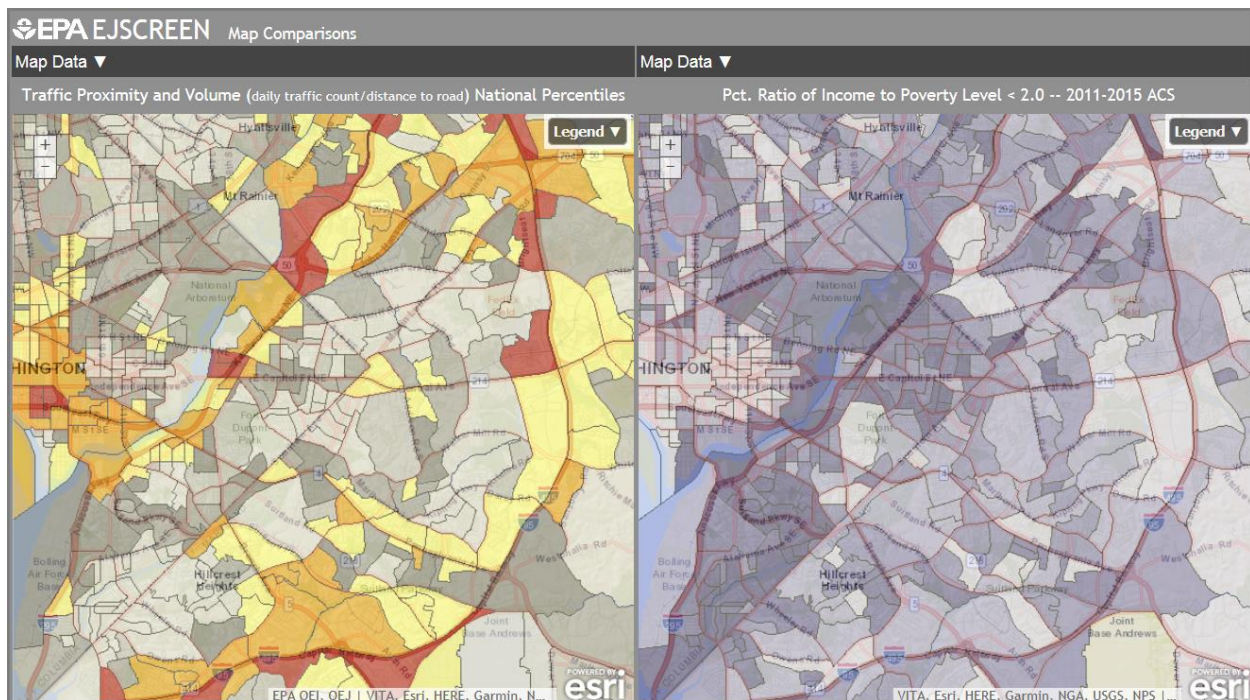


## EJSCREEN User Guide



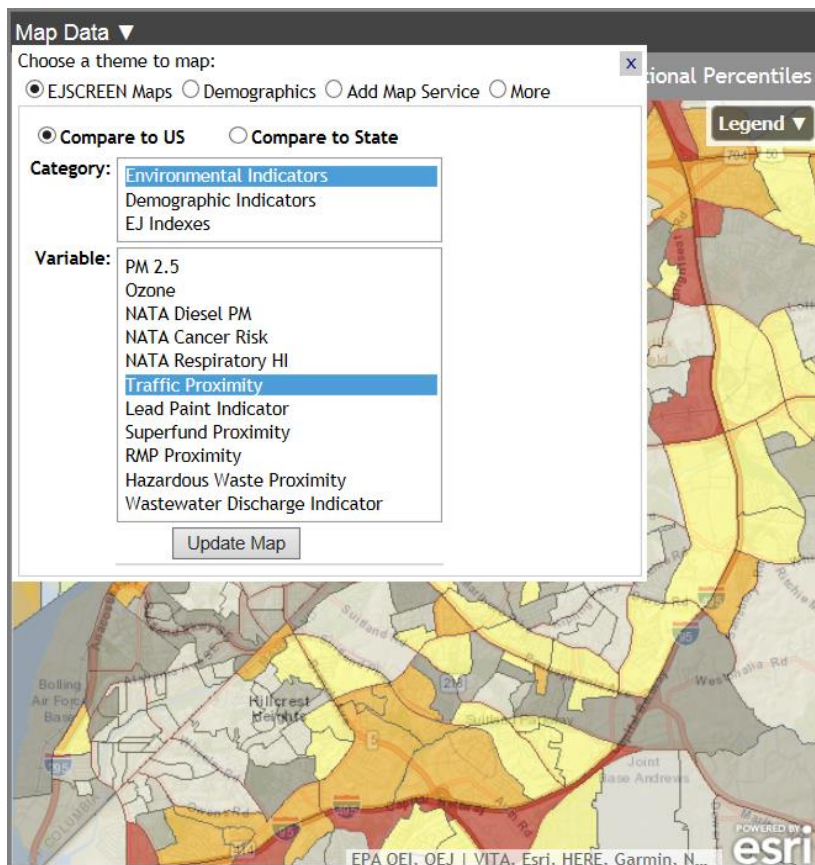
### 4.2 Side-by-Side Maps

The **Side-by-Side Maps** option allows users to compare different map layers for a location on side by side maps.

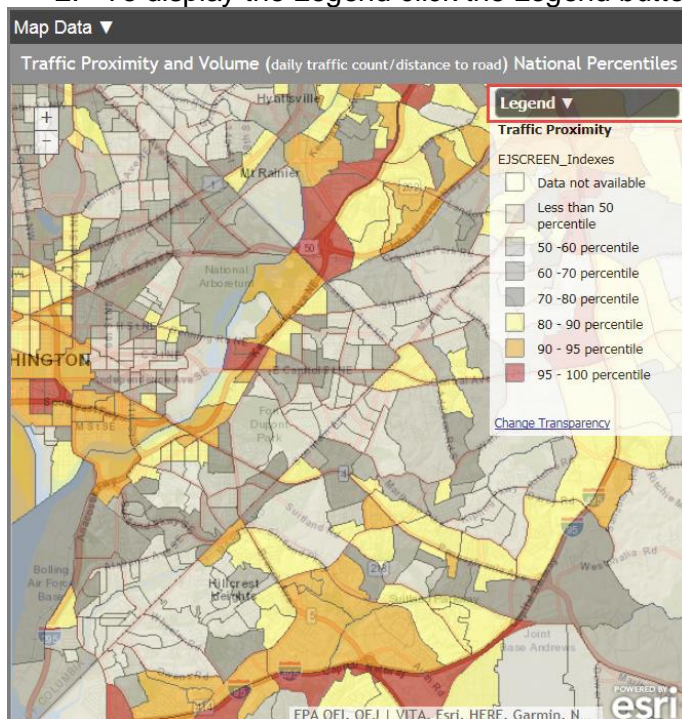


1. When the **Side-by-Side Maps** tool is opened, Traffic Proximity and Volume and Pct Ratio of Income to Poverty Level < 2 are selected as the default map data. To change the selections, click the Map Data button, then select a layer from the menu and then click the Update Map button. This will update the map to display the selected layer.

## EJSCREEN User Guide



2. To display the Legend click the Legend button in the upper right hand corner of the map.



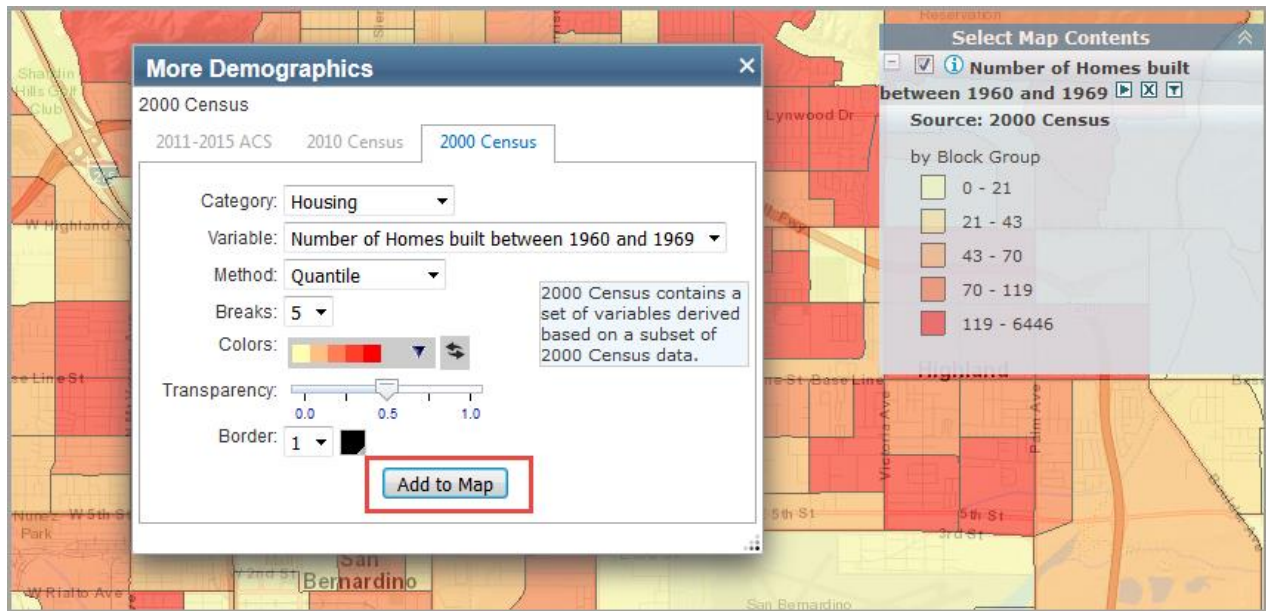
### 4.3 More Demographics

The **More Demographics** option allows users to display supplementary demographic information from the Census Bureau in the map.

Demographic Data is available for 2011-2015 ACS, 2010 Census, and 2000 Census. Categories and variables depend on the data set. All Demographic options allow selection of method, breaks, colors, transparency and border.

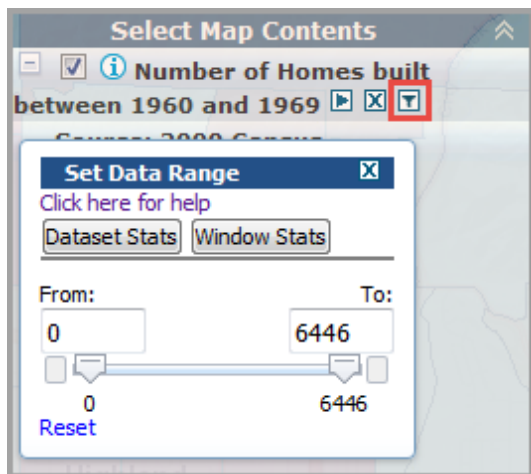
1. Click the tab for the dataset.
2. Choose Category from the dropdown menu.
3. Select variable from dropdown menu.
4. Adjust Method, Breaks, Color, Transparency and Border if desired.
5. Click the **Add to Map** button to add layer to map and to the Select Map Contents Menu and legend.



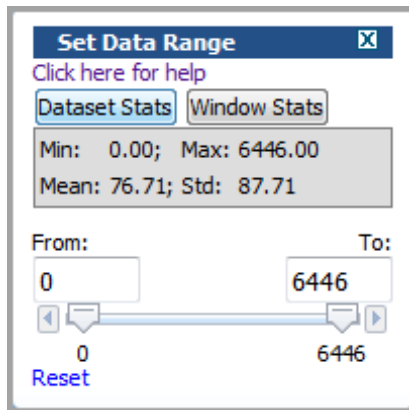


### 4.3.1 Filtering Demographics Layers

All demographics layers can be filtered.



1. Click the the filter button.
2. Two sets of the statistics are available to assist with specifying cutoffs. Click on **Dataset Stats** to obtain the statistics; including minimum, maximum, mean, and standard deviation, for the entire layer. Click on **Window Stats** to obtain the statistics for the current map window. The corresponding statistics of minimum, maximum, mean, and standard deviation are computed for those features shown in the current map window.



**Set Data Range** [X]

[Click here for help](#)

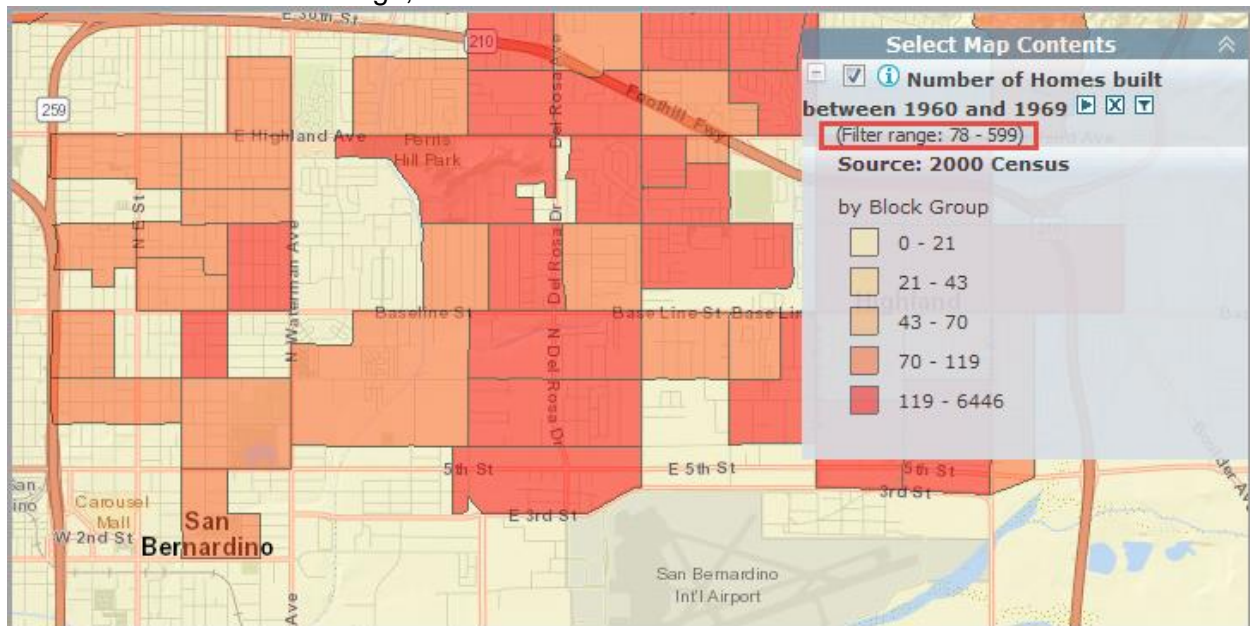
**Dataset Stats** **Window Stats**

Min: 0.00; Max: 6446.00  
Mean: 76.71; Std: 87.71

From:  To:

[Reset](#)

3. The default range for the slider is set with the minimum and maximum values from the dataset statistics. Specify a data range by moving the slider or entering a value in the “From” or “To” box.
4. The map will refresh immediately after a new value is set, and the updated data range is shown in the legend.
5. To clear the data range, click on **Reset**.



### 4.4 Additional Maps

Options available under “Additional Maps” are shown below:

## EJSCREEN User Guide

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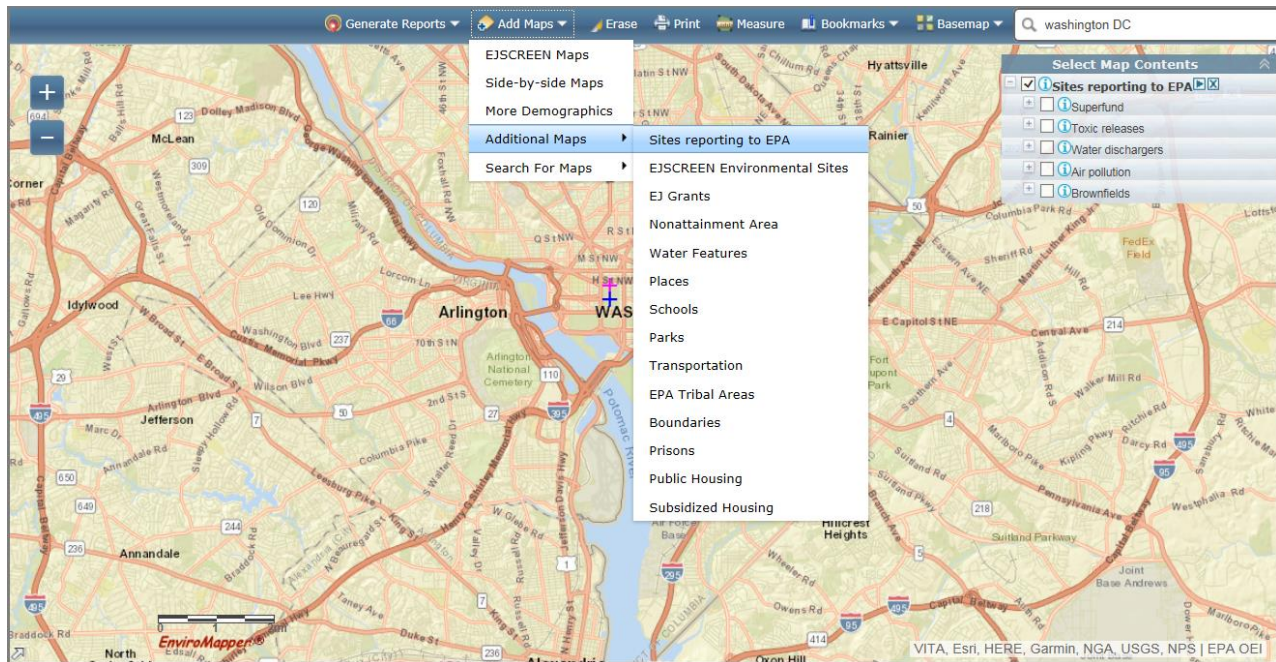
Sites reporting to EPA  
EJSCREEN Environmental Sites  
EJ Grants  
Nonattainment Area  
Water Features  
Places  
Schools  
Parks  
Transportation  
EPA Tribal Areas  
Boundaries  
Prisons  
Public Housing  
Subsidized Housing

## EJSCREEN User Guide

### 4.4.1 Sites Reporting to EPA

This map service contains the locations for the following program systems: Superfund, Toxic Releases, Water Dischargers, and Brownfields.

1. Click “Add Maps” in the Widget toolbar.
2. Click or mouse over “Additional Maps”.
3. Click Sites reporting to EPA.
4. Sites reporting to EPA will be added to the Select Map Contents menu.
5. Check boxes to add layers to the map.



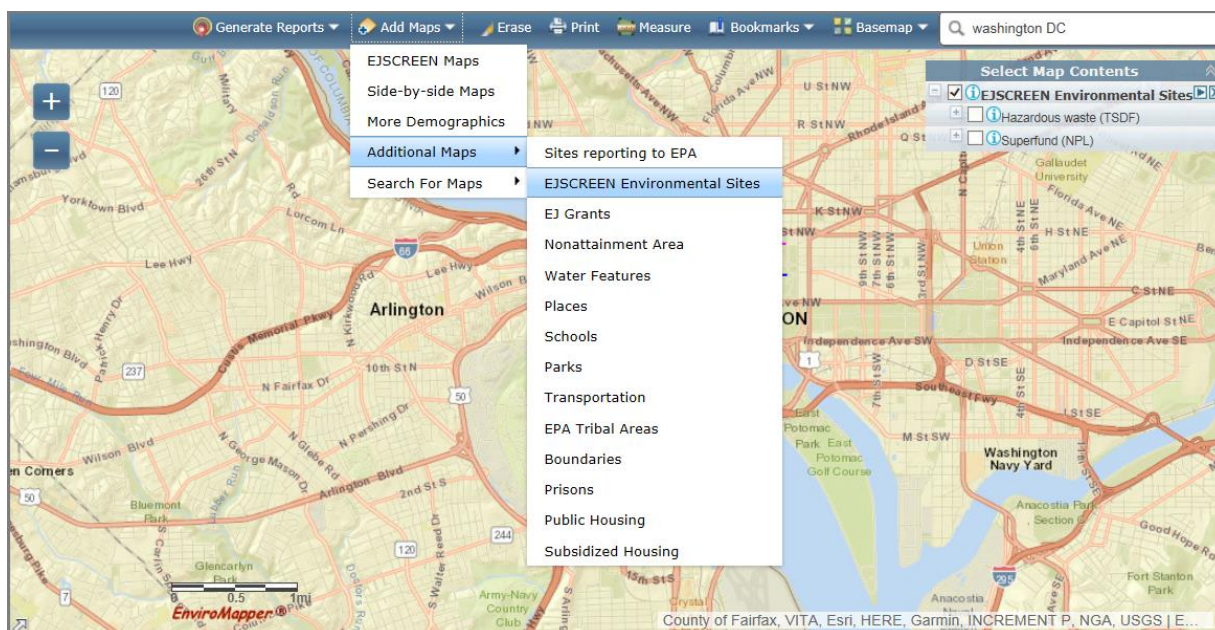


## EJSCREEN User Guide

### 4.4.2 EJSCREEN Environmental Sites

This map service contains the locations for the following program systems: Hazardous Waste (TSDf), and Superfund (NPL).

1. Click “Add Maps” in the Widget toolbar.
2. Click or mouse over “Additional Maps”.
3. Click EJSCREEN Environmental Sites.
4. EJSCREEN Environmental Sites will be added to the Select Map Contents menu.
5. Check boxes to add layers to the map

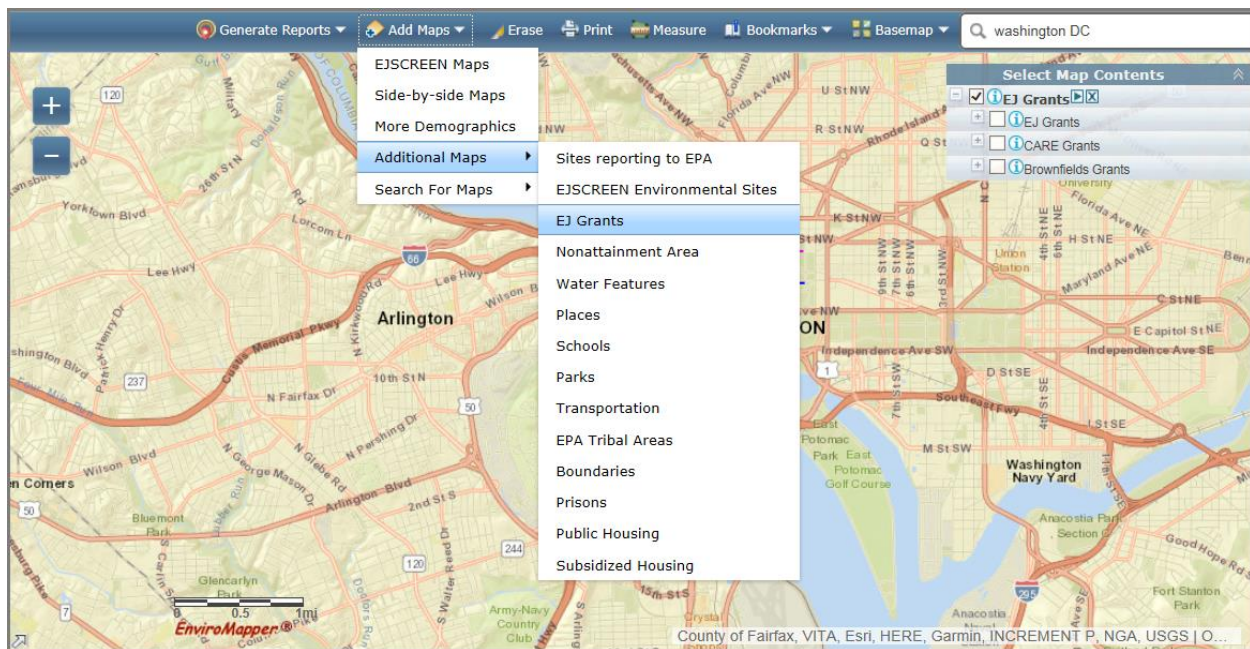


### 4.4.3 EJ Grants

This map service contains EPA grant locations including Environmental Justice grants, Community CARE grants, and Brownfields grants.

1. Click “Add Maps” in the Widget toolbar.
2. Click or mouse over “Additional Maps”.
3. Click EJ Grants.
4. EJ Grants will be added to the Select Map Contents menu.
5. Check boxes to add layers to the map

## EJSCREEN User Guide

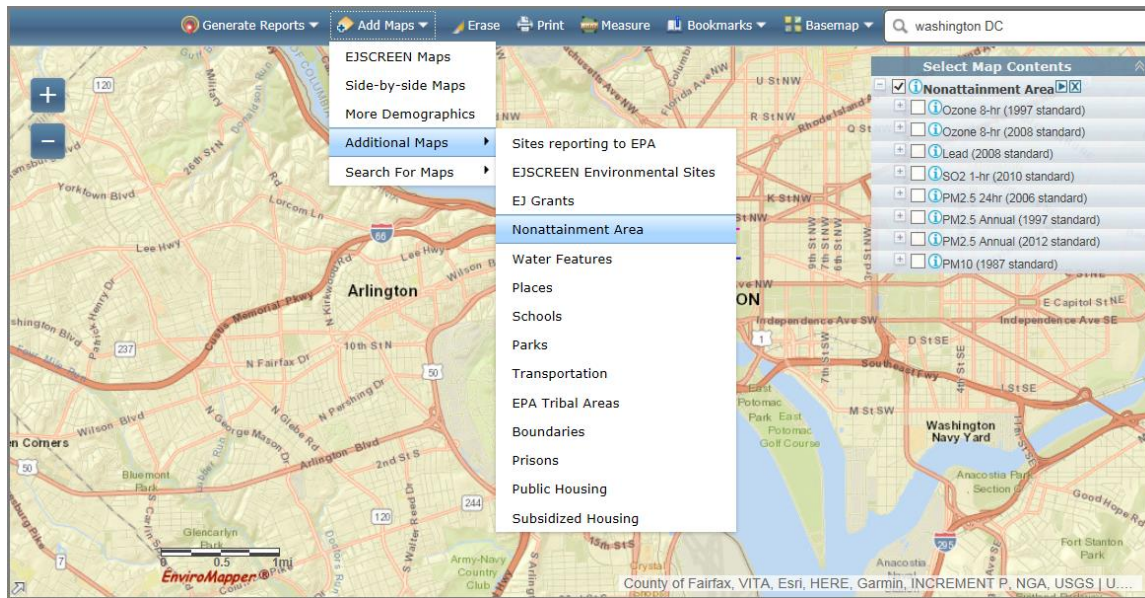


### 4.4.4 Nonattainment Area

This map service contains publicly available nonattainment areas data published by EPA. Further information on EPA nonattainment areas can be found at <http://www.epa.gov/oaqps001/greenbk/index.html>.

1. Click "Add Maps" in the Widget toolbar.
2. Click or mouse over "Additional Maps".
3. Click Nonattainment Area.
4. Nonattainment Area will be added to the Select Map Contents menu.
5. Check boxes in the Select Map Contents to add layers to the map.

# EJSCREEN User Guide



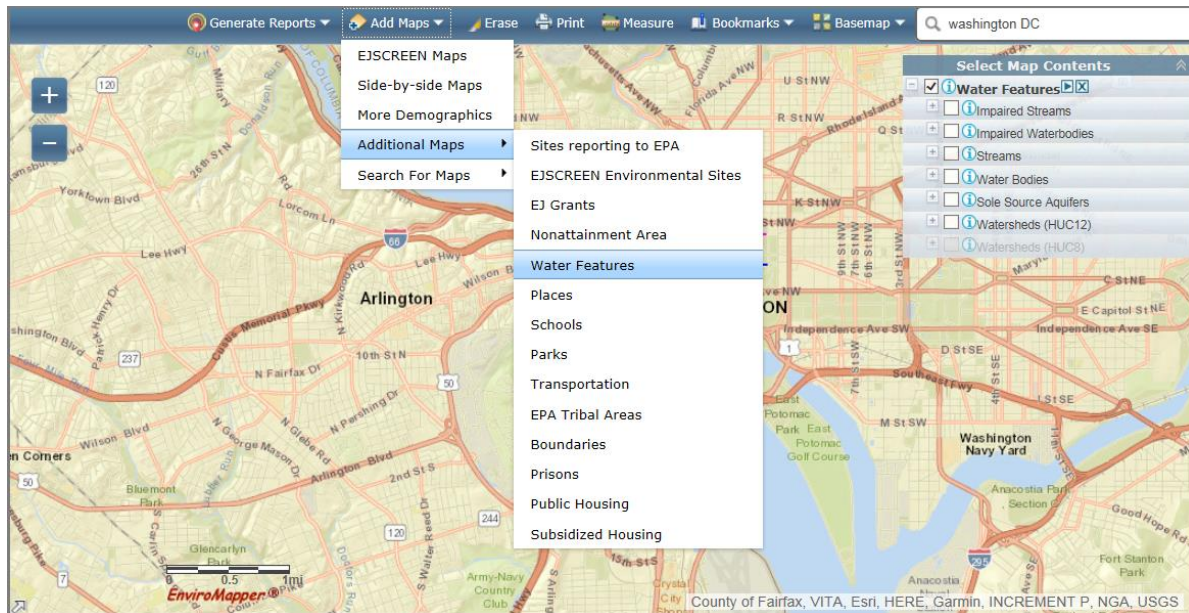


## EJSCREEN User Guide

### 4.4.5 Water Features

This map service contains Water and Hydrological layers for Impaired Streams, Impaired Waterbodies, Streams, Water Bodies, Sole Source Aquifers, Watersheds (HUC12), and Watersheds (HUC8).

1. Click “Add Maps” in the Widget toolbar.
2. Click or mouse over “Additional Maps”.
3. Click Water Features.
4. Water Features will be added to the Select Map Contents menu.
5. Check boxes in the Select Map Contents to add layers to the map.



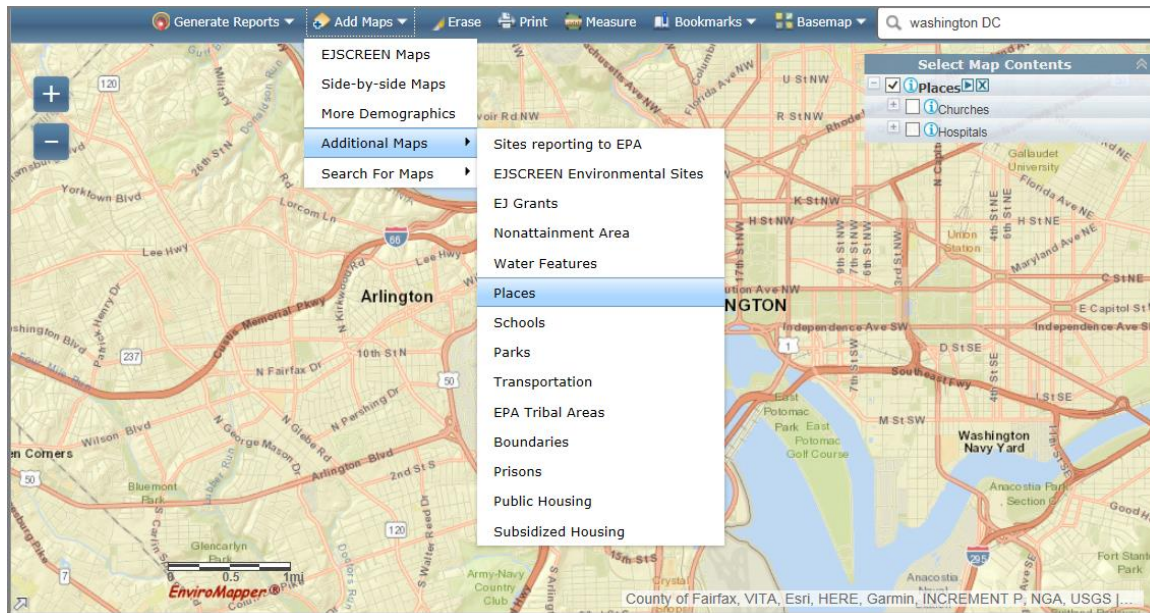


## EJSCREEN User Guide

### 4.4.6 Places

This map service contains locational data for Churches and Hospitals from the United States Geological Survey (USGS) Geographic Names Information System (GNIS) service.

1. Click “Add Maps” in the Widget toolbar.
2. Click or mouse over “Additional Maps”.
3. Click Places.
4. Places will be added to the Select Map Contents menu.
5. Check boxes in the Select Map Contents to add layers to the map.

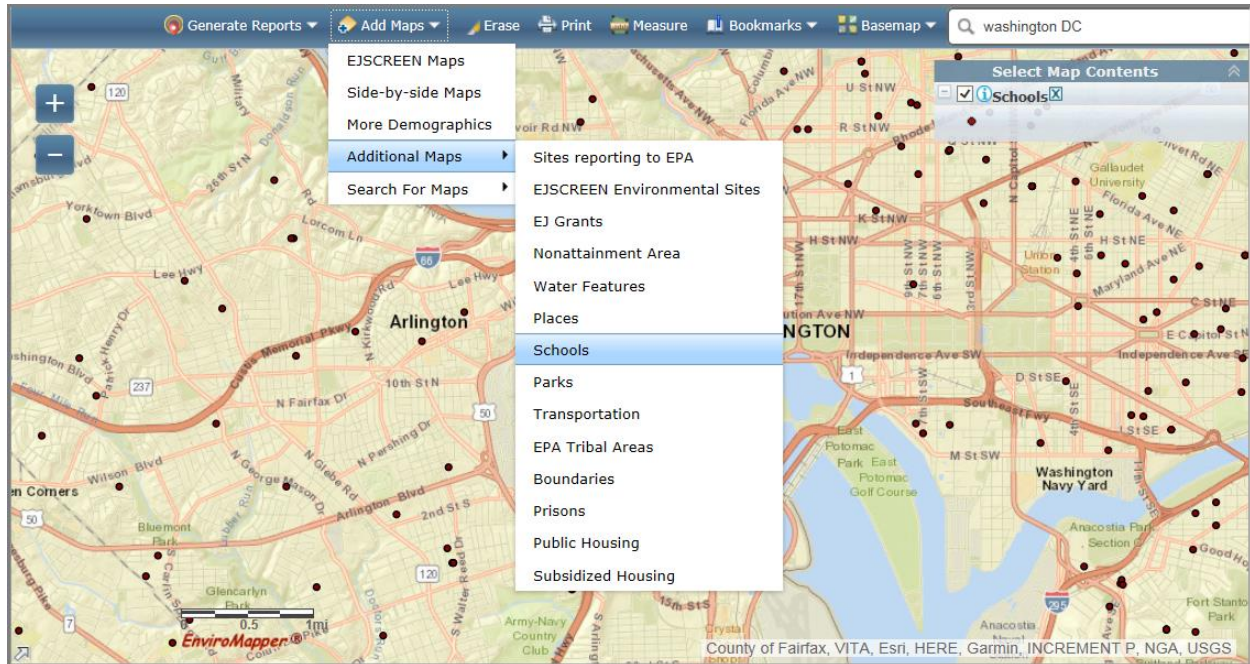


## EJSCREEN User Guide

### 4.4.7 Schools

This map service contains locational data for Public Schools (2014 – 2015) from the National Center for Education Statistics (NCES) map service.

1. Click “Add Maps” in the Widget toolbar.
2. Click or mouse over “Additional Maps”.
3. Click Schools.
4. Schools will be added to the Select Map Contents menu and to the map.

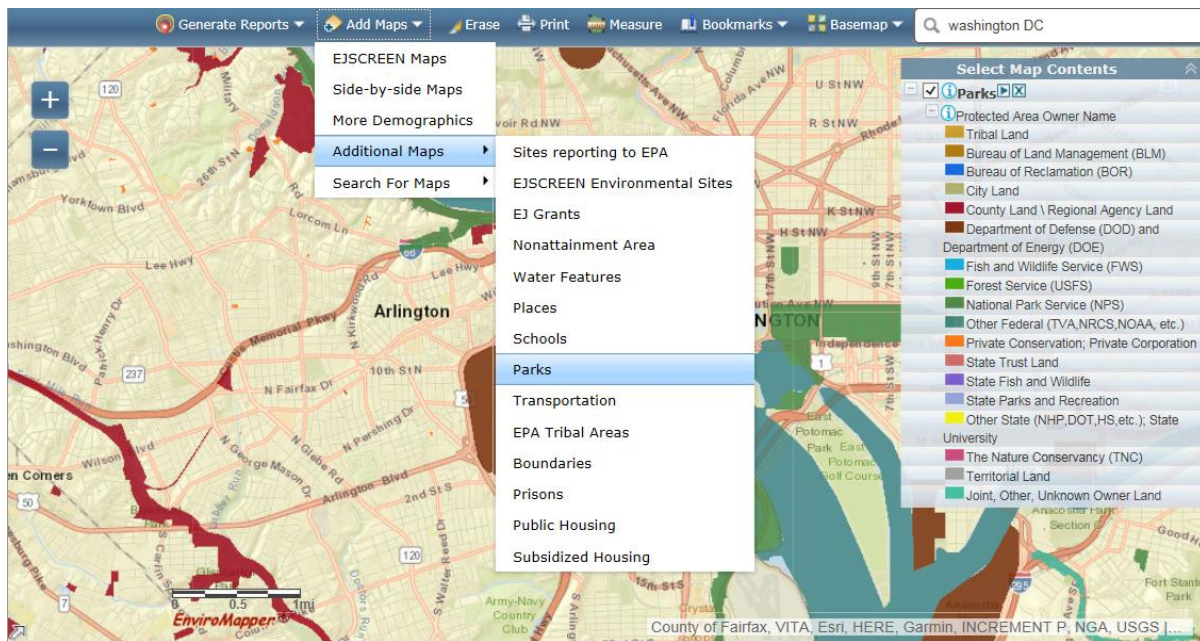


## EJSCREEN User Guide

### 4.4.8 Parks

This map service illustrates and describes public land ownership represented in the Protected Areas Database of the United States (PAD-US). The database is published by the United States Geologic Survey (USGS), Core Science Systems, Core Science Analytics and Synthesis, National GAP Analysis Program.

1. Click “Add Maps” in the Widget toolbar.
2. Click or mouse over “Additional Maps”.
3. Click Parks.
4. Parks will be added to the Select Map Contents menu and to the map.

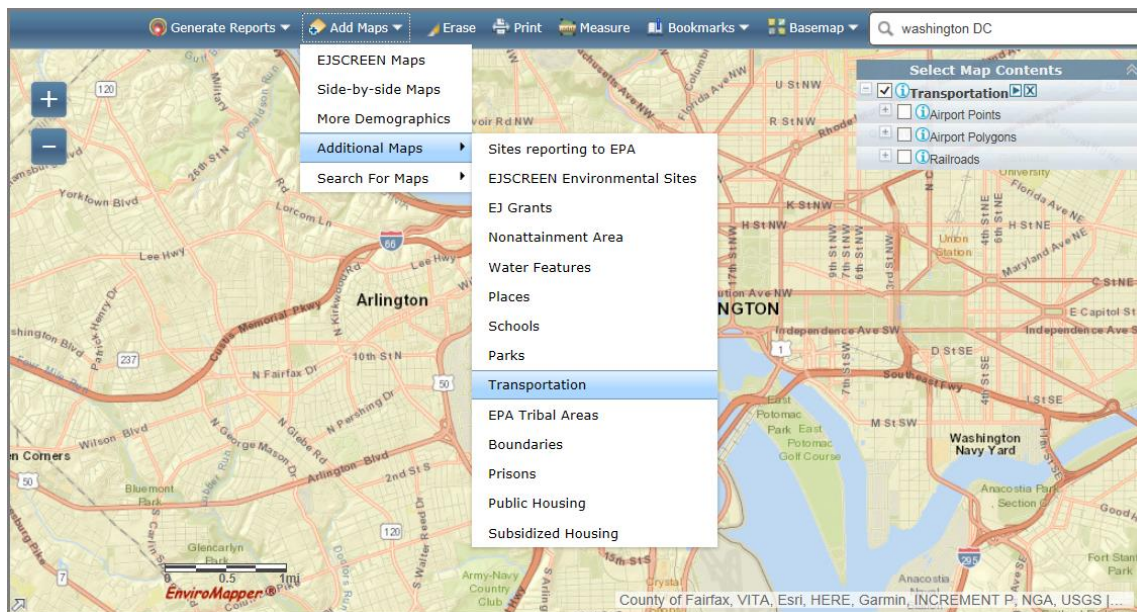




### 4.4.9 Transportation

This map service contains transportation layers for Airport Points, Airport Polygons and Railroads.

1. Click “Add Maps” in the Widget toolbar.
2. Click or mouse over “Additional Maps”.
3. Click Transportation.
4. Transportation will be added to the Select Map Contents menu.
5. Check boxes in the Select Map Contents to add layers to the map.

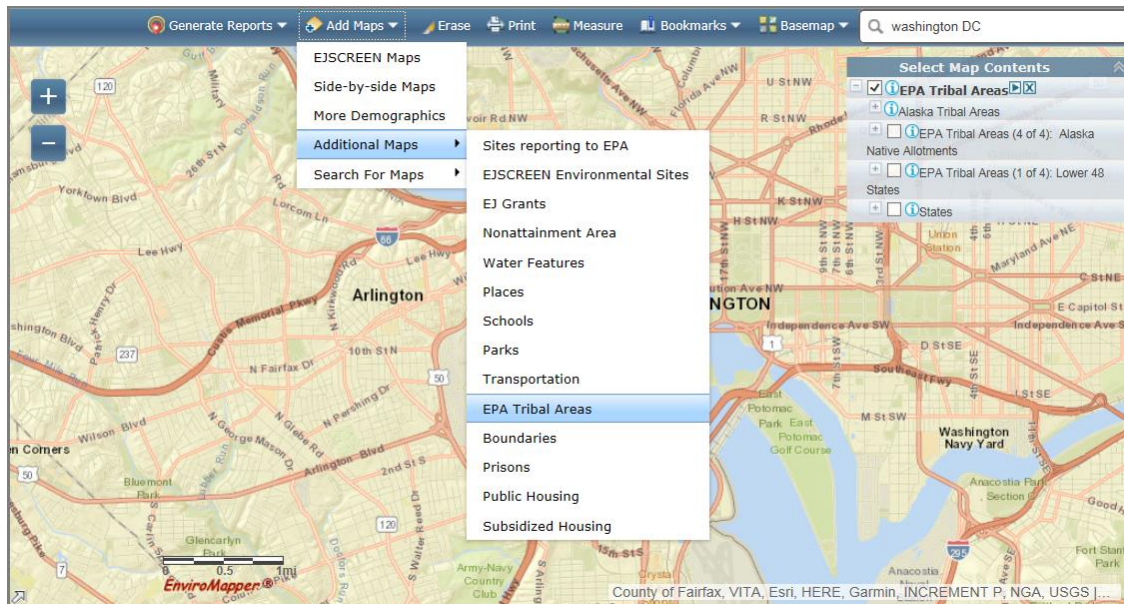


## EJSCREEN User Guide

### 4.4.10 EPA Tribal Areas

This map service contains tribal areas for lower 48 states and Alaska Native Villages, Alaska Native Allotments and Alaska Reservations in Alaska.

1. Click “Add Maps” in the Widget toolbar.
2. Click or mouse over “Additional Maps”.
3. Click EPA Tribal Areas.
4. EPA Tribal Areas will be added to the Select Map Contents menu.
5. Check boxes in the Select Map Contents to add layers to the map.

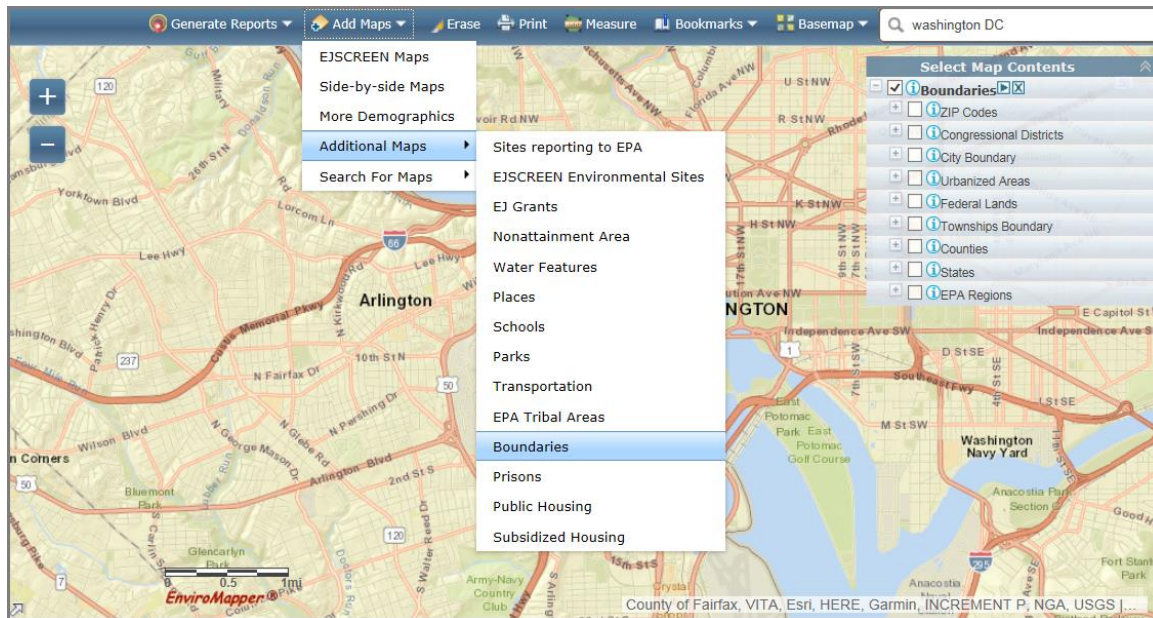


## EJSCREEN User Guide

### 4.4.11 Boundaries

This map service contains boundary data for ZIP Codes, Congressional Districts, City Boundary, Urbanized Areas, Federal Lands, Townships Boundary, Counties, States, and EPA Regions.

1. Click “Add Maps” in the Widget toolbar.
2. Click or mouse over “Additional Maps”.
3. Click Boundaries.
4. Boundaries will be added to the Select Map Contents menu.
5. Check boxes in the Select Map Contents to add layers to the map.



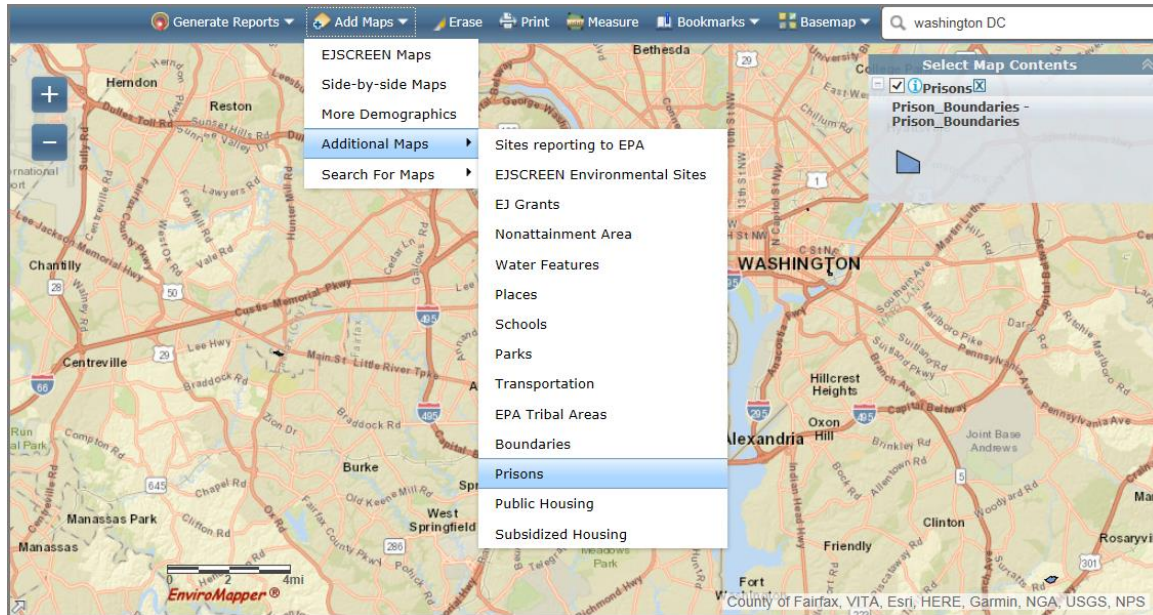


## EJSCREEN User Guide

### 4.4.12 Prisons

This map service contains secure detention facilities for the Homeland Infrastructure Foundation-Level Data (HIFLD) database.

1. Click “Add Maps” in the Widget toolbar.
2. Click or mouse over “Additional Maps”.
3. Click Prisons.
4. Prison Boundaries will be added to the Select Map Contents menu and to the map.

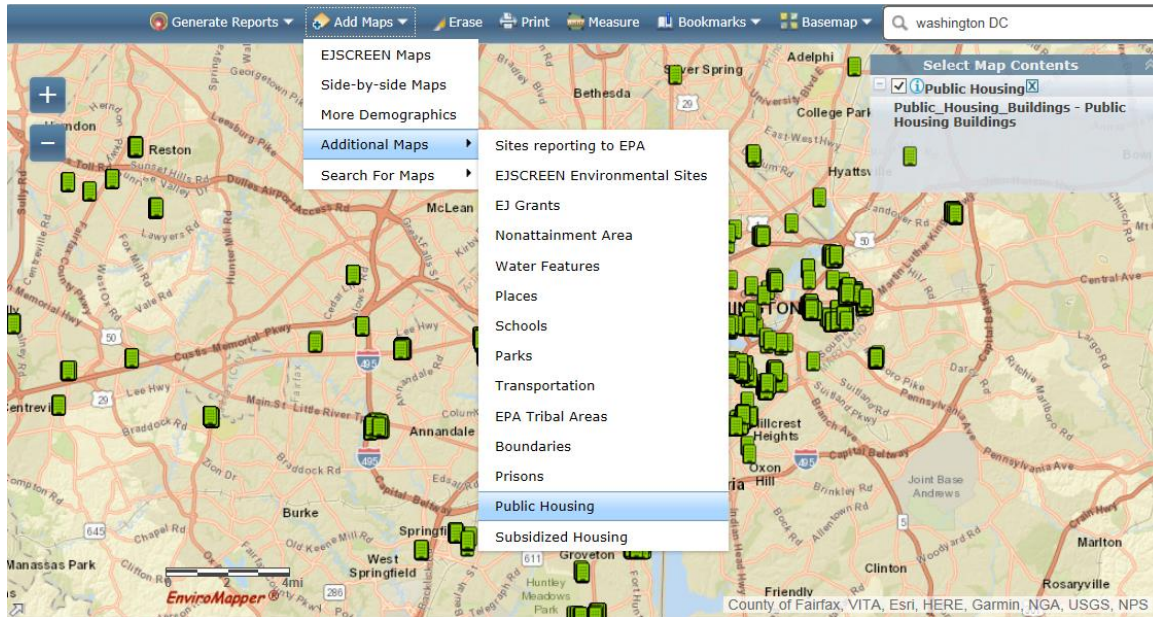


## EJSCREEN User Guide

### 4.4.13 Public Housing

This map service contains Public Housing data from the United States Department of Housing and Urban Development.

1. Click “Add Maps” in the Widget toolbar.
2. Click or mouse over “Additional Maps”.
3. Click Public Housing.
4. Public Housing will be added to the Select Map Contents menu and to the map.

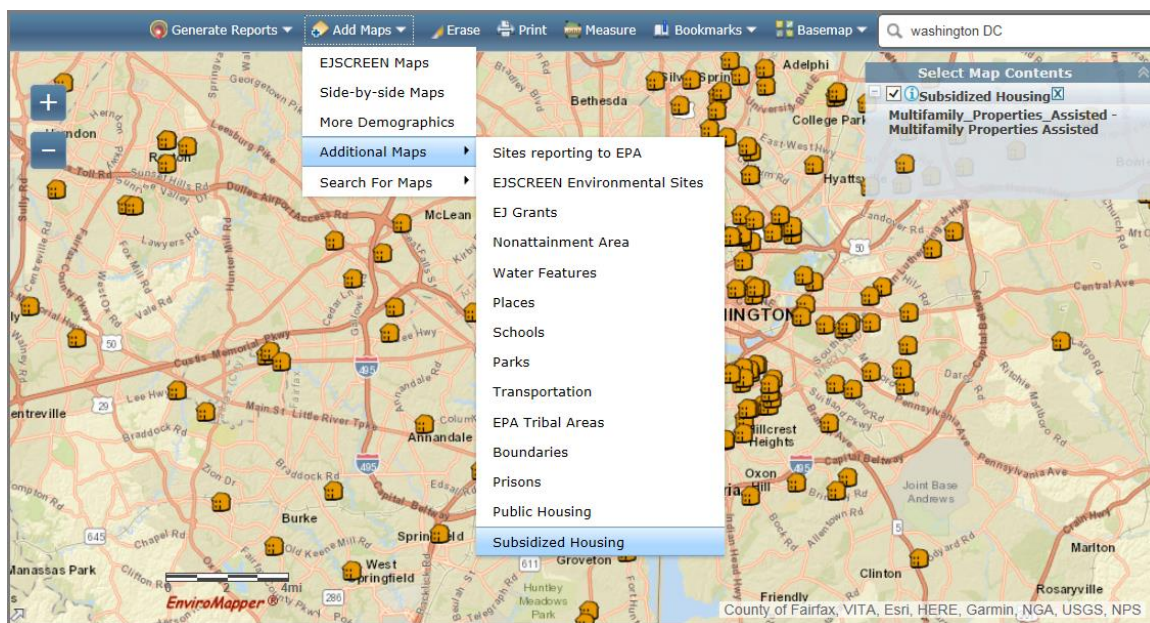


## EJSCREEN User Guide

### 4.4.13 Subsidized Housing

This map service contains Multifamily Properties Assisted data from the United States Department of Housing and Urban Development. HUD Multifamily Housing property portfolio consist primarily of rental housing properties with five or more dwelling units such as apartments or town houses, but can also be nursing homes, hospitals, elderly housing, mobile home parks, retirement service centers, and occasionally vacant land.

1. Click “Add Maps” in the Widget toolbar.
2. Click or mouse over “Additional Maps”.
3. Click Subsidized Housing.
4. Multifamily Properties Assisted will be added to the Select Map Contents menu and to the map.



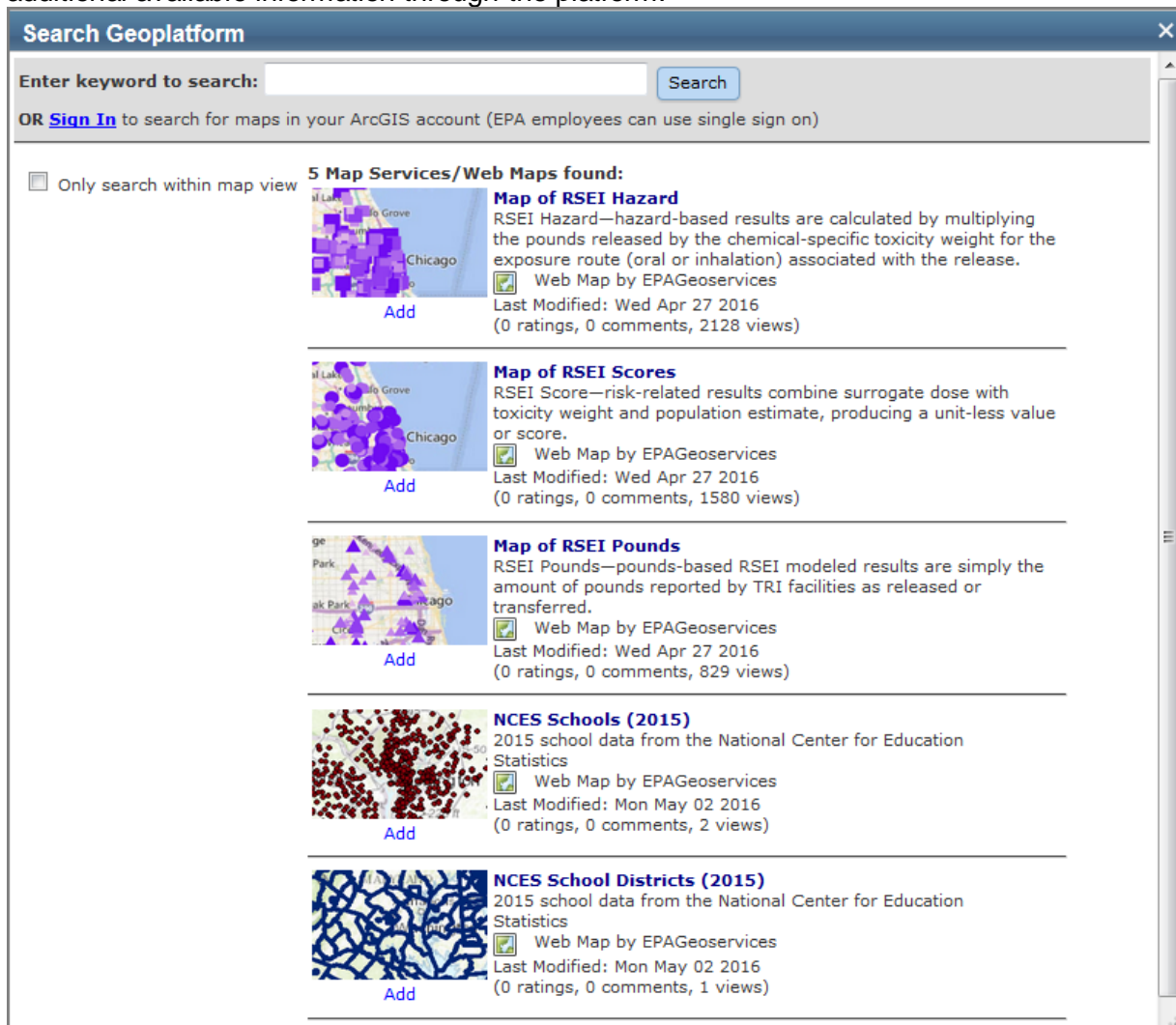


### 4.5 Search for Maps

The Search for Maps option to search the geoplatform or to add publicly available data from the web.

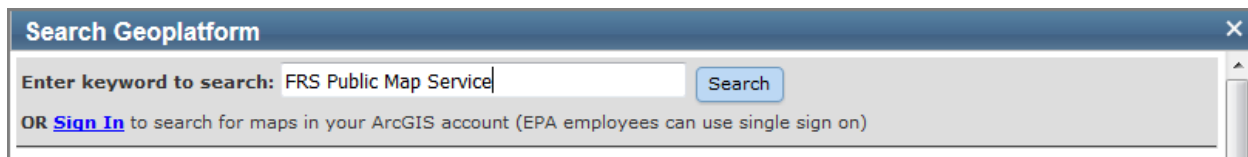
#### 4.5.1 Search Geoplatform

The Search Geoplatform allows the user to search content on ArcGIS Online. Users with an account through ArcGIS.com can click "Sign In" on the top-right corner to sign in and view additional available information through the platform.

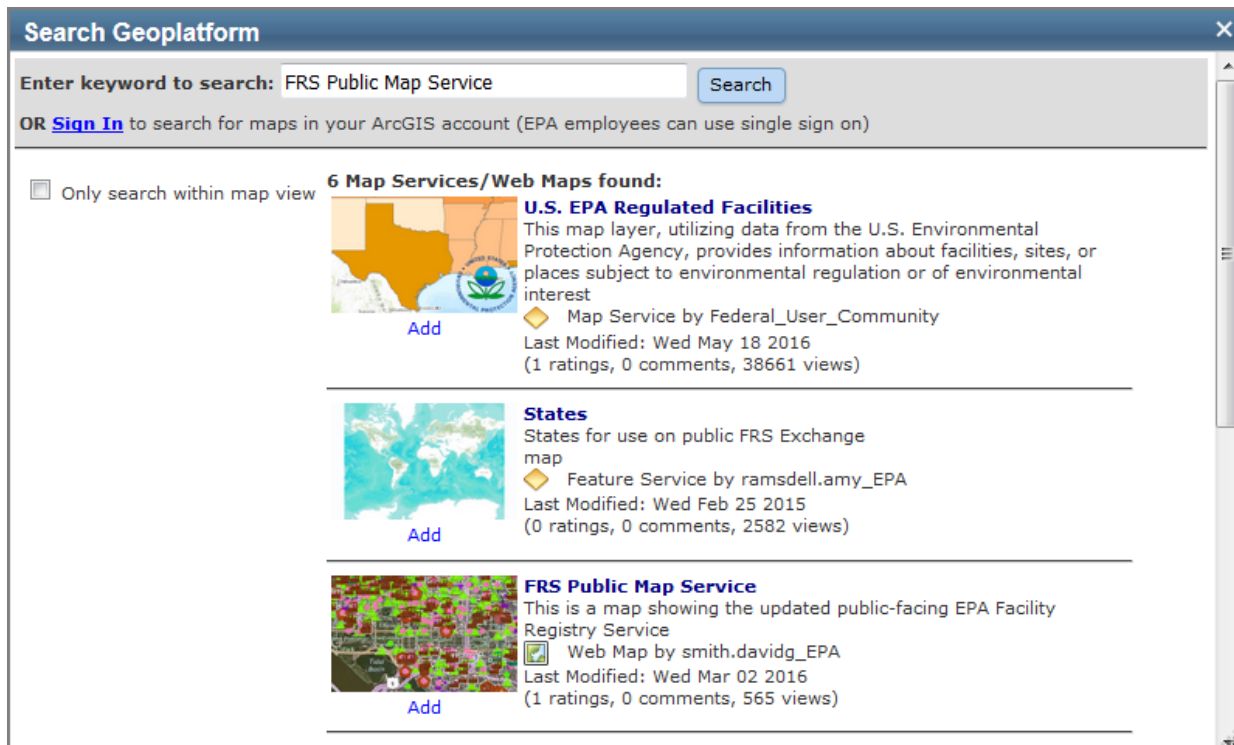


1. Default layers available for selection include Map of RSEI Hazard, Map of RSEI Scores, Map of RSEI pounds, NCES Schools(2015) and NCES School Districts (2015).
2. To search for additional layers, enter a keyword in the **Enter keyword to search** text box. Press Enter on the keyboard or click **Search**.

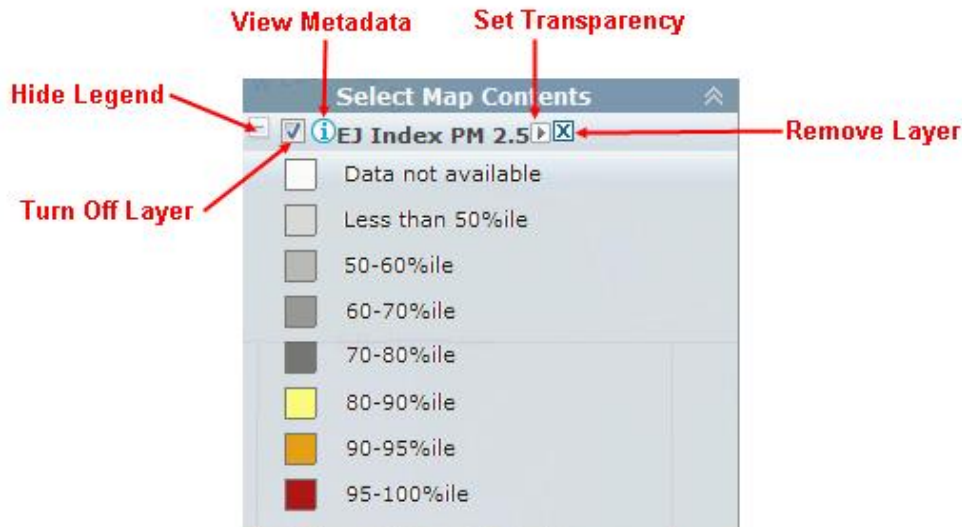
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### 3. Search results display in the window



4. Click **Add** to add a layer to the **Select Map Contents** menu.
5. The layers can be controlled or toggled on and off in the **Select Map Contents** menu.



### 4.5.2 Add Map Services

The Add Map Services allows a user to add publicly available data from the web to the map.

The screenshot shows the 'Add Map Services' dialog box. It has a title bar with a close button. Below the title bar, there is a text box with the text 'Choose one of the following options and enter a proper URL to add publicly available data from the web to the map.' Below this text box, there are four radio buttons: 'ArcGIS Server Web Service (Whole service)', 'OGC Web Service (WMS)', 'KML/KMZ', and 'GeoRSS'. Below the radio buttons, there is a text box for the URL with the text '\*URL: http://' and a sample URL '(http://<server>/arcgis/rest/services/<service name>/MapServer)'. Below the URL text box, there is a text box for the 'Service title:'. Below the 'Service title' text box, there is a blue button labeled 'Add to Map'. Below the 'Add to Map' button, there is a text box for the 'Sample URL:' with the text 'http://sampleserver1.arcgisonline.com/ArcGIS/rest/services/Demographics/ESRI\_Census\_USA/MapServer/0,1'.

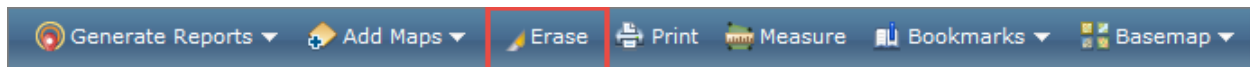
1. Select from the options by clicking the appropriate radio button.
2. Enter a valid publically available URL in the URL text box.
3. Enter the Service title in the text box if desired.
4. Click the Add to Map button.





### 5. Erase Widget

The **Erase** widget is used to remove any drawings from the map.



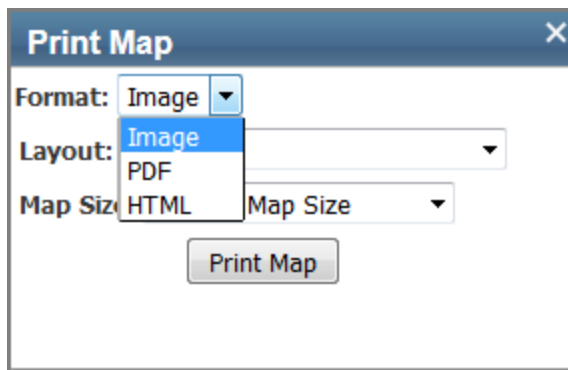
1. Locate the Widget toolbar at the top of the application.
2. Click the **Erase** icon.
3. All added drawings and measurement markers will be removed from the map.

### 6. Print Widget

The **Print** widget is used to print the map.



1. Locate the Widget toolbar at the top of the application.
2. Click the **Print** icon.
3. The print map option allows you to select image, PDF or HTML format.



4. For printing a map and its associated legend, use the HTML format and print the map using your internet browser.

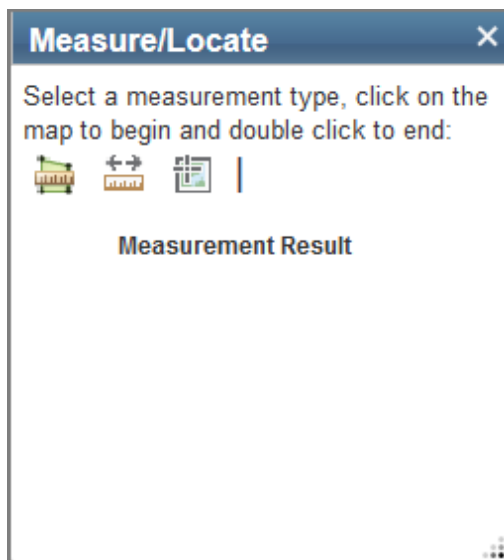
## 7. Measure Widget

The **Measure** widget allows the user to measure geographic distance as well obtain the longitude and latitude for a location on the map.

1. Locate the Widget toolbar at the top of the application.
2. Click the **Measure** icon.

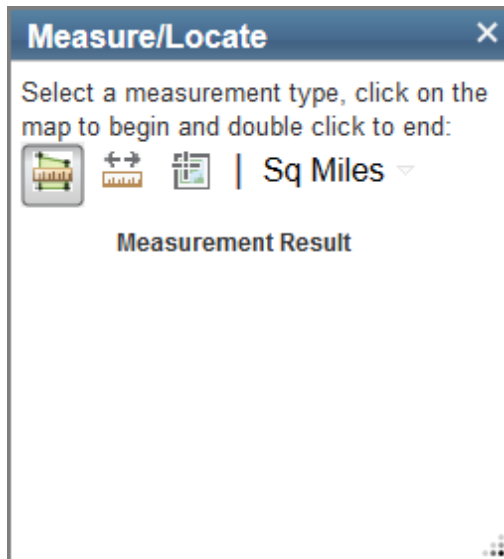



The **Measure** widget will be displayed.

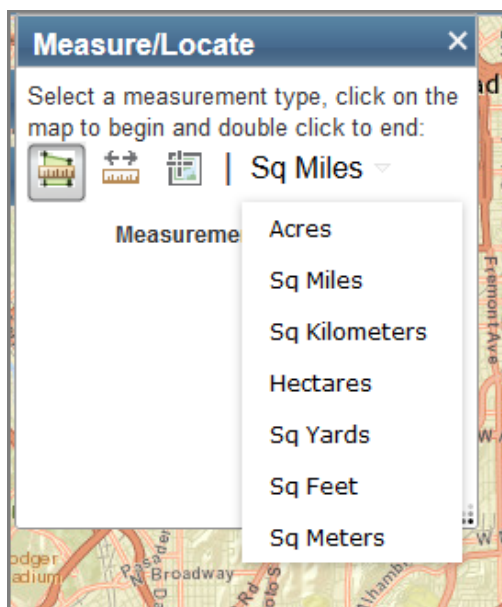


### 7.1 Measure Area

The **Measure Area** tool allows the user to measure the area of a polygon.



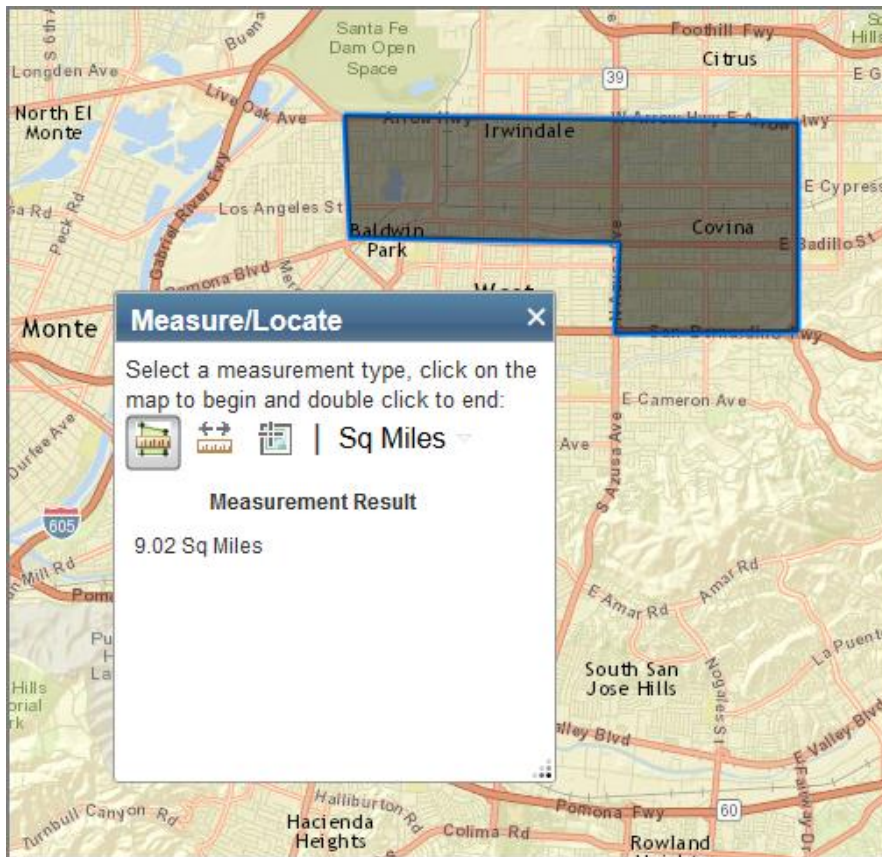
1. Locate the Widget toolbar at the top of the application.
2. Click the **Measure** icon.
3. Click the **Measure Area** icon .
4. Area Units of Sq Miles will appear on the Measure window. A dropdown menu with all unit options is located next to the default units.



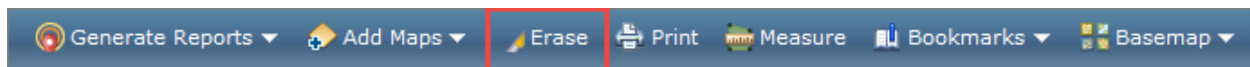
5. Select the desired unit.
6. Click on the map to begin drawing the polygon. Continue clicking to add to the polygon and double click to complete the drawing.

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- The area measurement will appear in the Measure window.

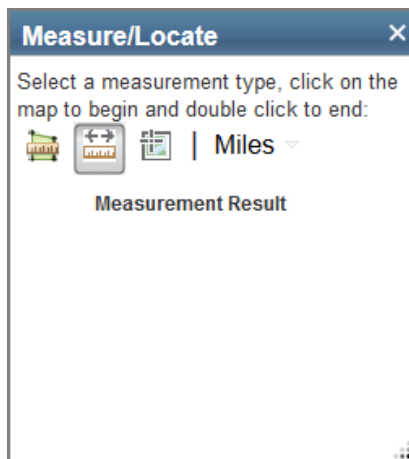



- To remove the drawing click the Erase Icon in the toolbar, click on the map to begin a new drawing, or close the Measure tool.

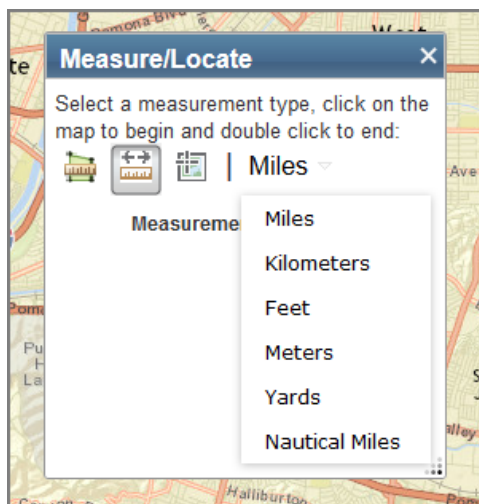


### 7.2 Measure Line

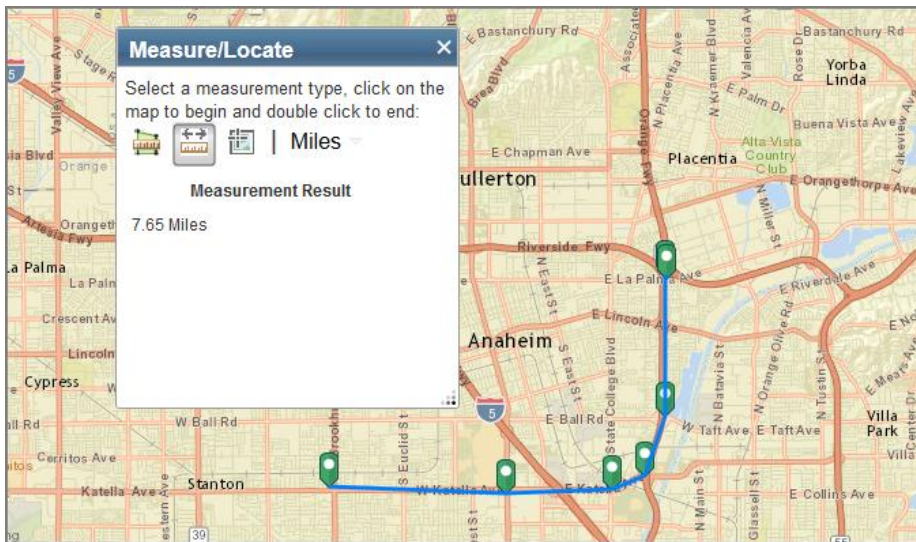
The **Measure Line** tool allows the user to measure distance on the map display.



1. Locate the Widget toolbar at the top of the application.
2. Click the **Measure** icon.
3. Click the **Measure Line** icon .
4. Distance Units of Miles will appear on the Measure window. A drop down menu with all unit options is located next to the default units.



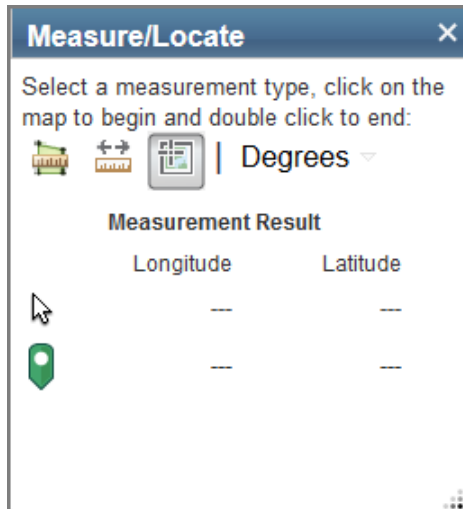
5. Click anywhere on the map display to begin a line. Click to add points along the line or to add angles to the line.
6. Double-click to complete the line.
7. The distance measurement will appear in the Measure window.



8. To remove the line click the Erase Icon in the toolbar, click on the map to begin a new line, or close the Measure tool.

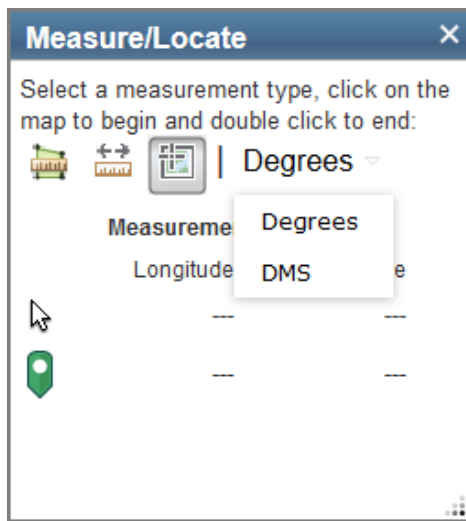
### 7.3 Latitude Longitude for a point

The **Measure Location** tool allows the user to obtain the latitude and longitude measurements for a point.

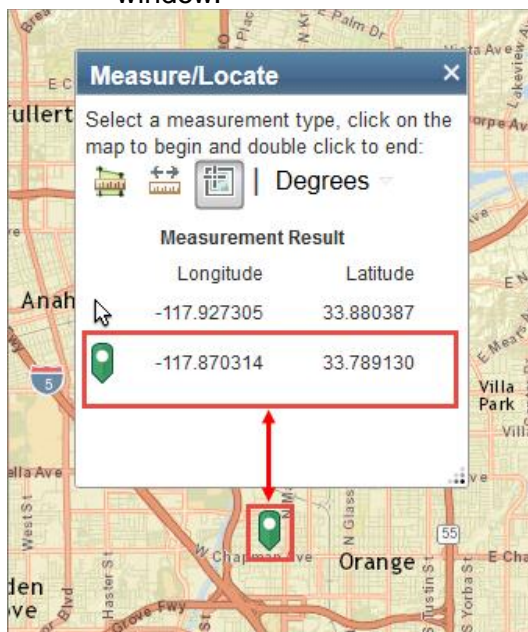


1. Locate the Widget toolbar at the top of the application.
2. Click the **Measure** icon.
3. Click the **Degrees** icon.
4. Location Units of Degrees will appear on the Measure window. A drop down menu with unit options is located next to the default units.





5. As the mouse is moved over the map the current location will display in the Measure window.
6. Click on the map to add a flag to the map and freeze the location in the measure window.



7. The location measurement can be copied from the Measure window.
8. To remove the flag click the Erase Icon in the toolbar or close the Measure tool.
9. To find the measurement of a new location click the Degrees icon in the measure window and click the map. This will also remove the previous flag.